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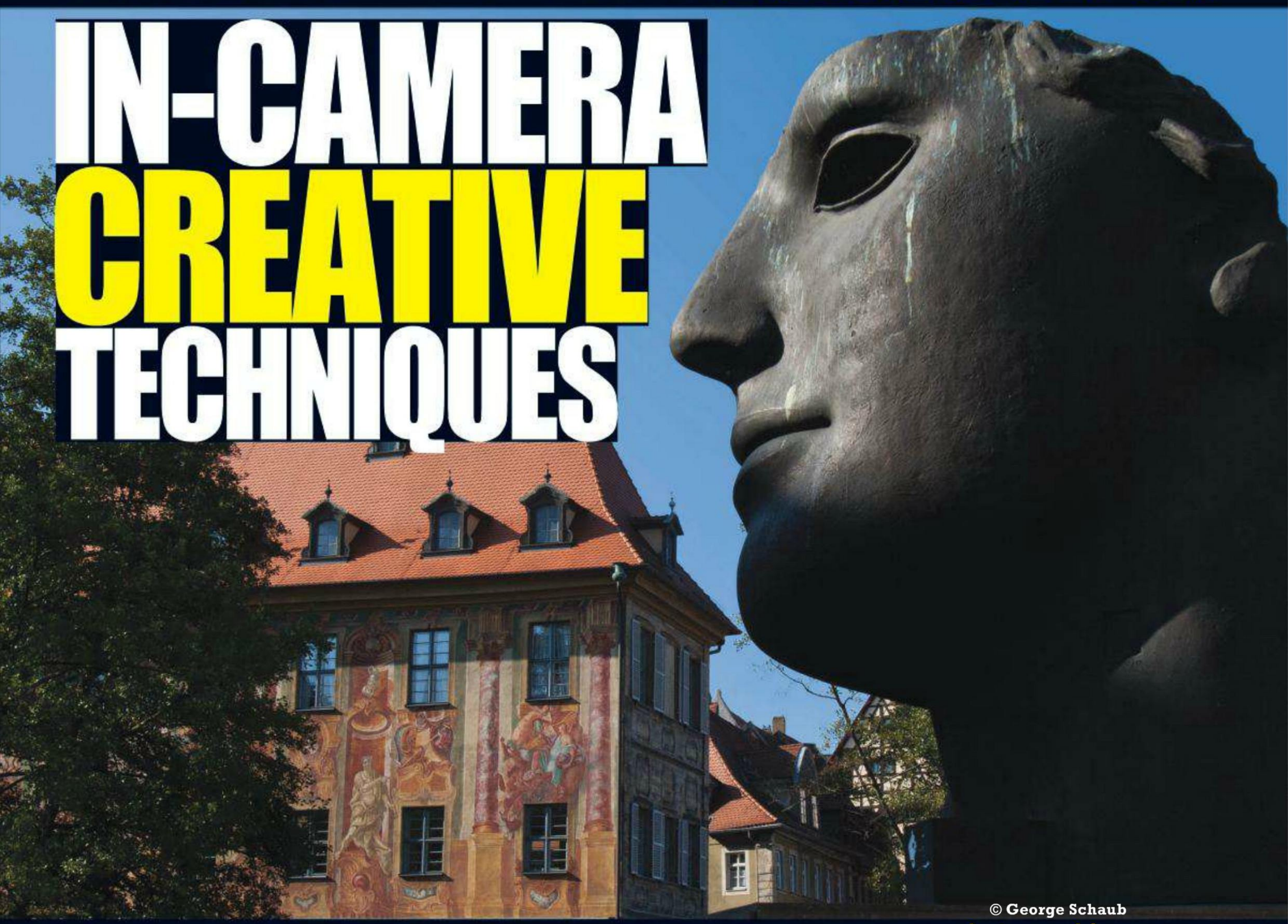

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by George Schaub

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Photo Tips And Your Photography

Learn While You Create

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The aim of this issue is to help you make better photographs. It concentrates on making pictures in the camera, as opposed to processing them later (something we'll cover in a future issue). The tips utilize settings you'll find in most digital cameras, including "point and shoot" cameras with a zoom lens, aperture and shutter speed controls, mirror-less digital cameras (compact system cameras with interchangeable lenses) and fully featured D-SLRs.

This issue is set-up as a series of tips that touch on many of the creative functions available in your camera—from Exposure and Focusing modes to settings for enhancing contrast, color and image mood. While it is about digital cameras and how to set them it is mainly about making great photographs using the many functions and controls in your camera.

We see it as a "short course" for learning techniques, just as if you were taking a photo workshop. Follow the tips and try them out and you will find yourself becoming more familiar with the most used, and sometimes hidden, features and functions of your camera. We guarantee that as you explore and utilize the tips you'll bring your photos to the next level.

This issue of the Petersen's Photographic Digital Photography Guide is intended to provide both inspiration and technical guidance, something you can refer to as you learn about all the amazing tools your camera offers. It is also about seeing and becoming proficient in having the camera and the images you make serve as a witness to how you see the world. We hope that instructors and photo teachers will see this issue as a lesson guide for their students, and that it will serve as a resource for everyone to get the most they can from their digital camera. Consider it a practical guide to making creative images. ■

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Decisions About Compositions

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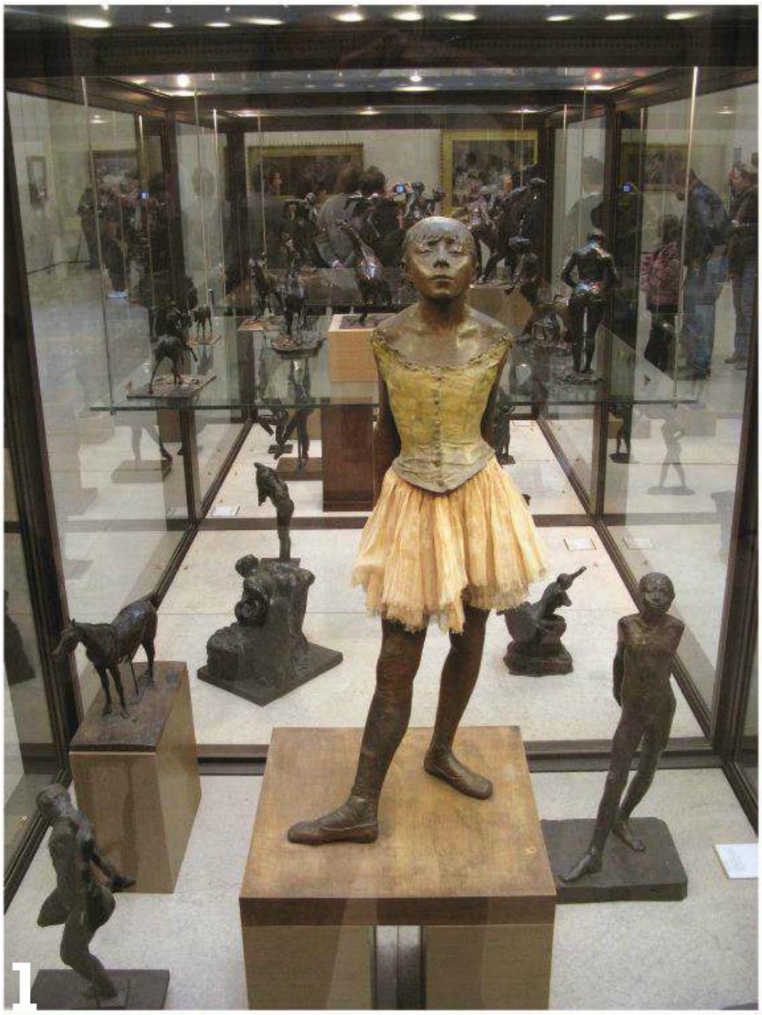

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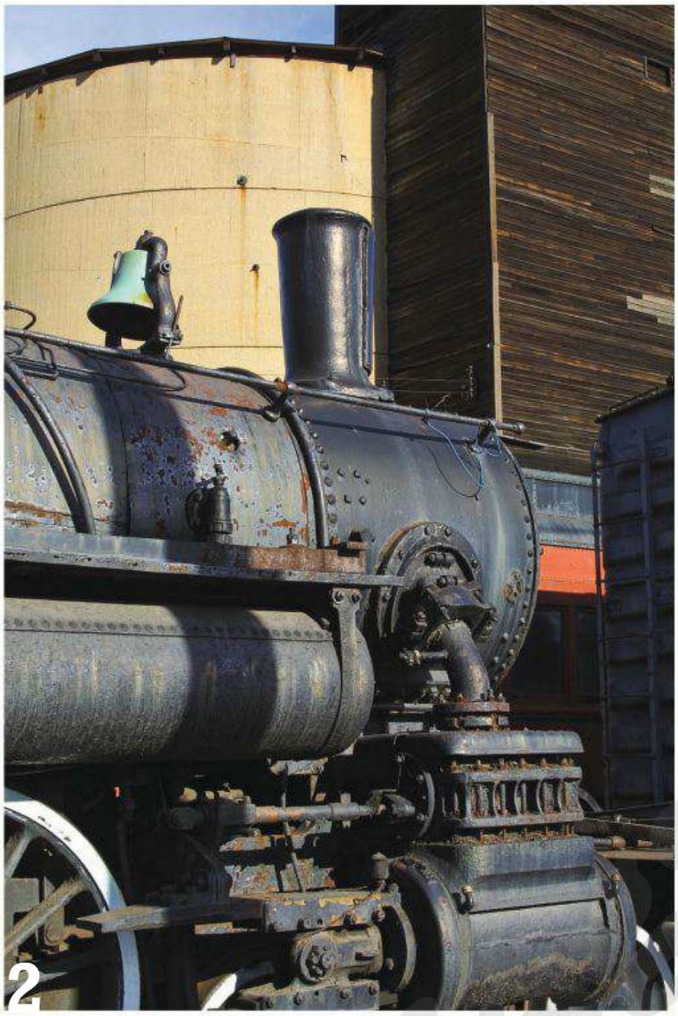

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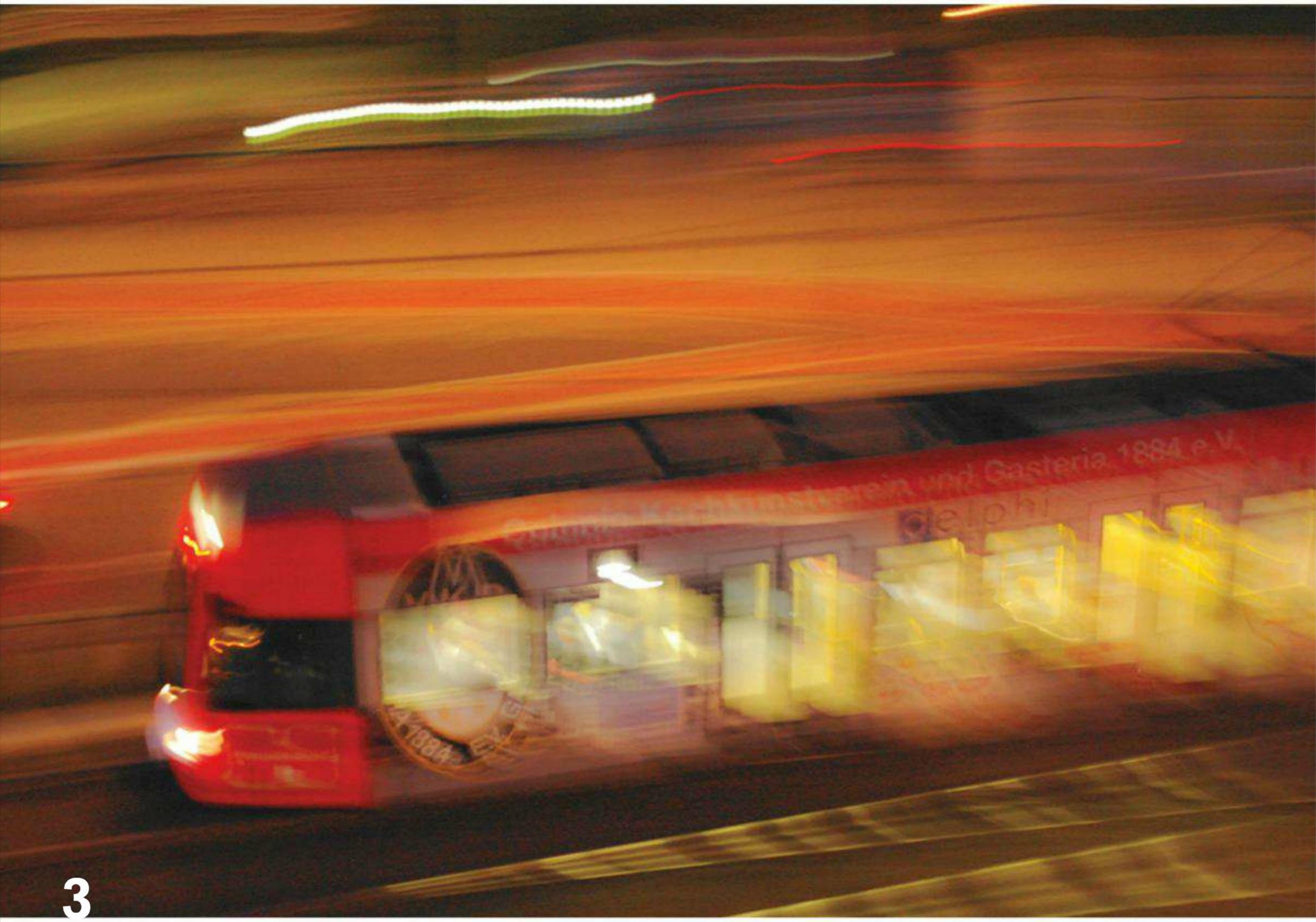
A camera enforces a "framing" of the world before you. While you can choose various aspect ratios (from standard to panoramic, from 3:4 to 6:19) the fact remains that you always have to choose what to include and what to leave out of the photo. It's like constructing a box and deciding what to put inside it. Making those decisions often involves utilizing certain compositional guidelines and tools that artists have used in the past, although like any rules they "are made to be broken." When deciding which guidelines to apply always remember that content rules, and that context helps tell the tale.

When considering composition, think about how much of the scene you want to include in the frame.

Photographic composition has a lot to do with what you include in the frame—and often as much about what you choose to exclude. Decisions include content and context, and how each serves to reinforce the other. Photo (#1) was part of a series made inside the Musée d'Orsay in Paris and includes the statue, the case in which it stood and the reflections of the hall around it, showing both "content and context" in the framing.

Always ask: How does my composition highlight the main subject or idea of this photograph?

The viewer should be able to make some sense of the main subject or idea that spurred you to make the picture. Knowing what the subject or idea is will guide you in how you frame, expose and compose the picture. Photo (#2) was made as part of an essay on a historical rail yard and includes elements of the steam engine and the sheds around it. While the engine has center stage, the buildings create both interesting background forms



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Photos © George Schaub

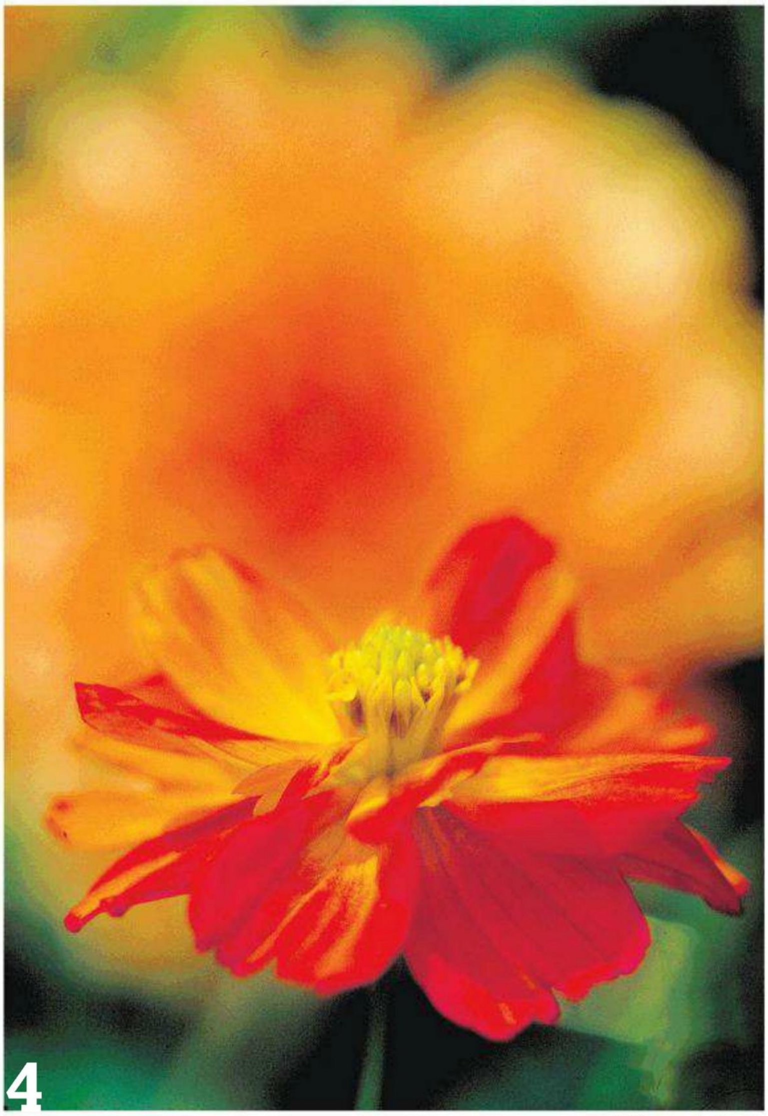
and the context of the working rail yard.

Think about image effects. What image effects will be most effective for the photo?

The two main "image effects" in photography are how you use the shutter speed settings to depict motion and how you use aperture settings to establish the relationship of foreground to background through focus—what's sharp and unsharp in the frame. Every photograph relies on these effects to serve as the foundation or context of what is being depicted.

Using shutter speed and aperture settings in creative ways for each photo puts incredible interpretive power in your hands. This handheld, panned, long shutter speed (1/4 sec) shot of a streetcar (#3) uses a slow shutter speed to depict energy and motion. This close-up of a flower (#4) uses a shallow depth of field and wide aperture to create a painterly counterpoint background to the intricate details of the flower.

Remember that your eyes and the camera "see" differently.



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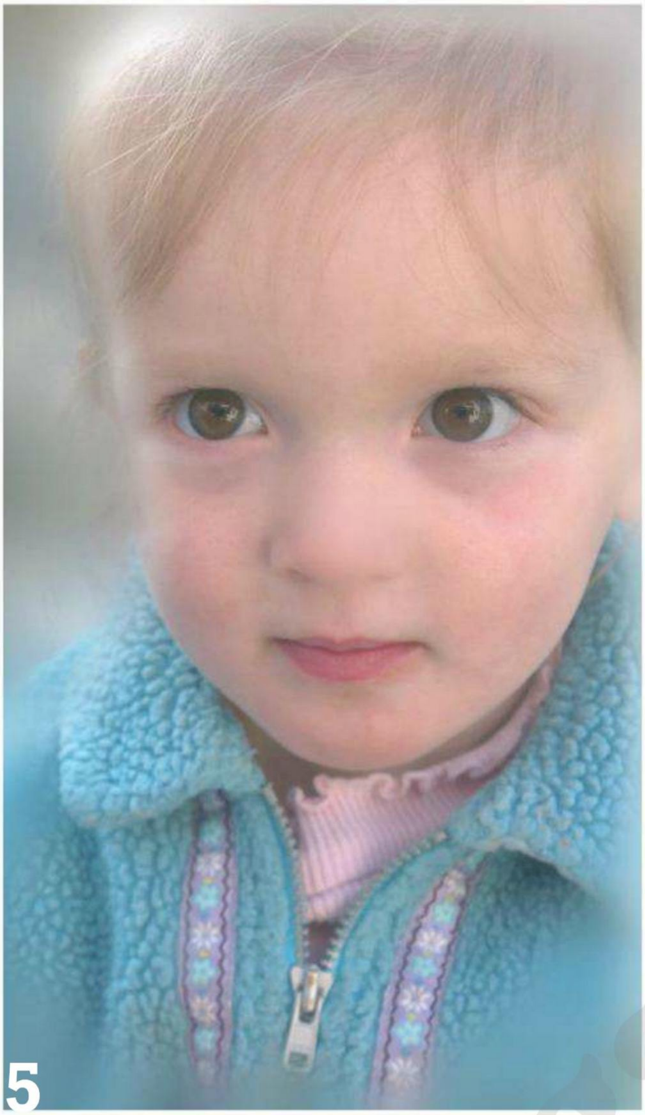

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There can be a difference between what you see in your mind's eye when you take the picture and what the camera might record. One of the most important ways to get successful results is to understand that you can use camera settings to interpret a subject and not just record it. Creative settings are poetry to the camera's prose. In this photo of young Kallie Polgrean (#5) a soft focus, low contrast and high-key effect was used. Creative interpretation takes practice and experience, and trying out different settings and approaches to making pictures. Learning about all the tools your camera affords is the first step, but it also takes understanding how much potential for beauty each moment holds and how camera settings can reveal it.

Take the time to appreciate the qualities of light. The mood created by light has a profound influence on the final image. Some important considerations include the contrast in the scene (the range between the lighter and darker areas), the direction of light and how light can influence the intensity of color. A shaft of light

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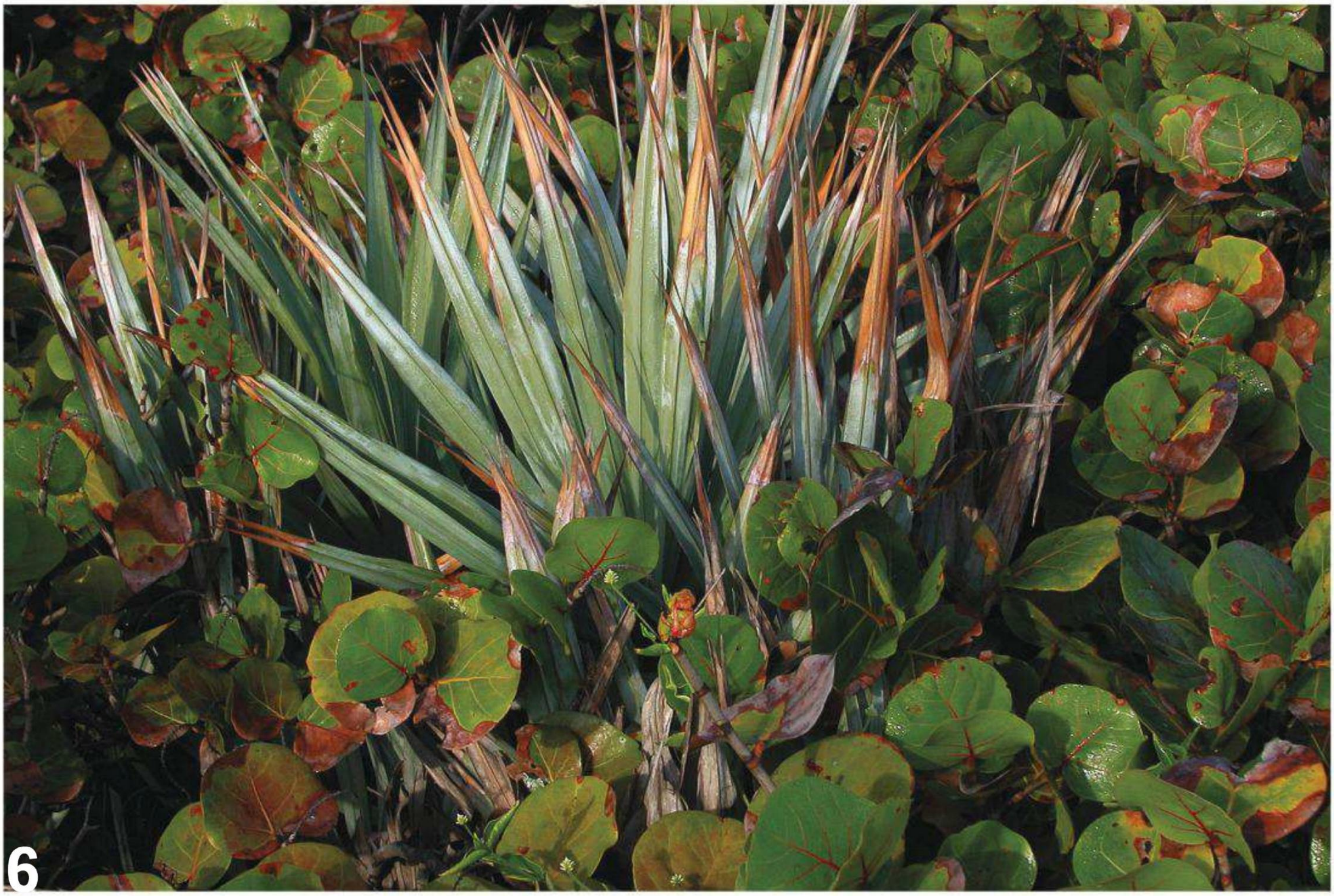

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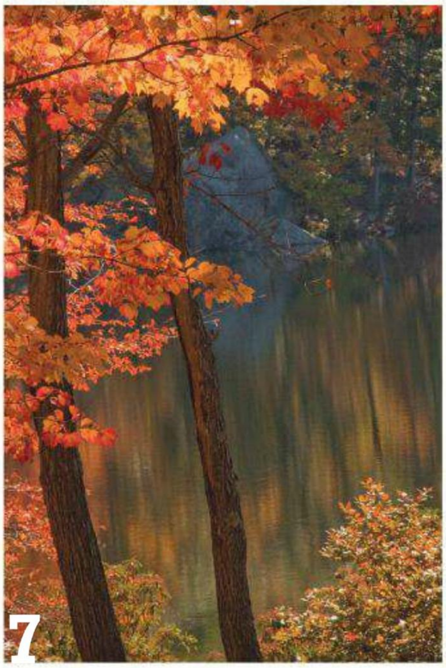

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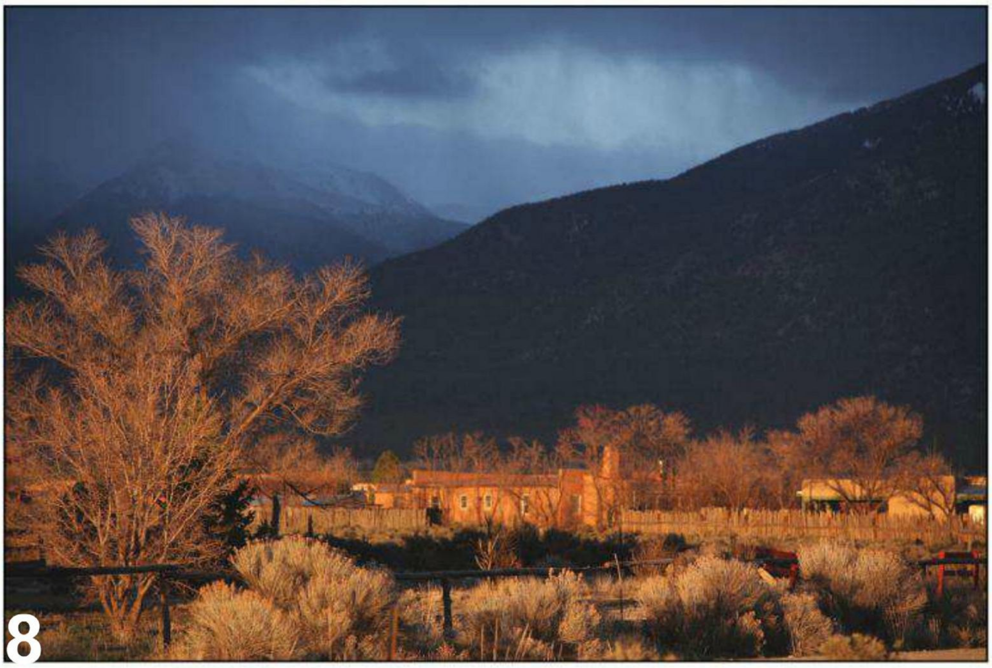

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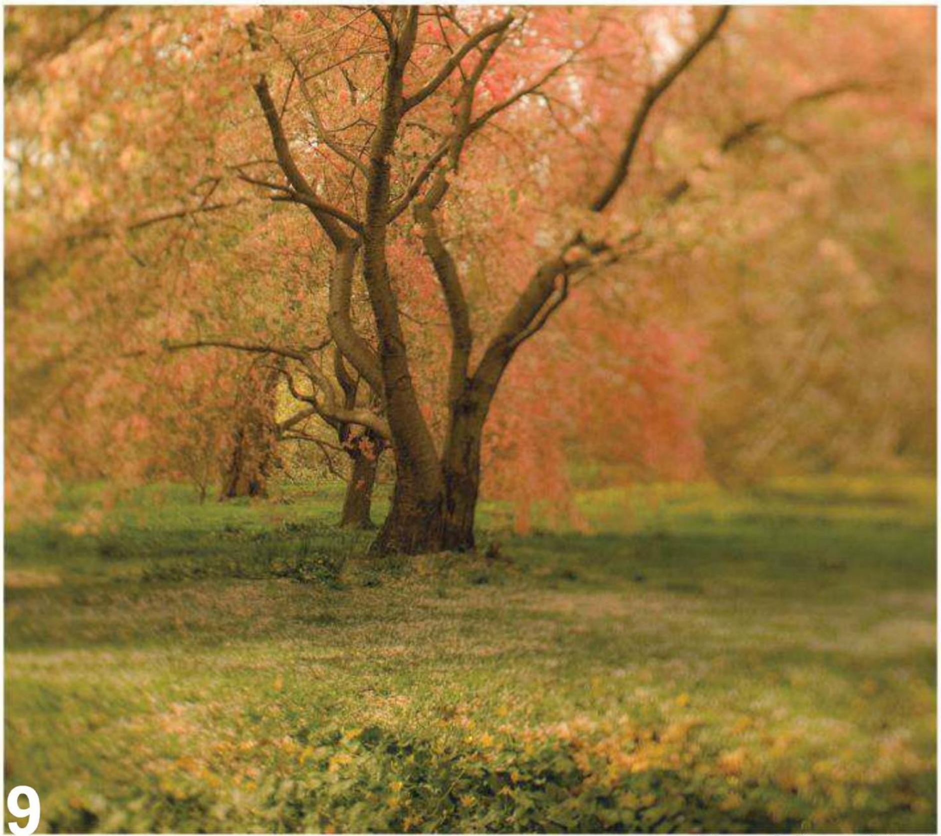
coming from camera left illuminated the undergrowth in the Everglades, bringing a warm tone and crispness that reveals all of the texture in the plants and the glistening dew on the leaves (#6). This fall scene is all about the reflective quality of light (#7), enhanced with a warm white balance (WB) setting (Cloudy White Balance preset). The character of the light adds to our sense of place (our ability to imagine being present when the image was made) and reinforces the subject matter.

Study the color of light.

As light from the sun passes through the atmosphere it is subject to scatter and reflection and often reaches us with a colorcast. This can be seen in the bluish cast of light in distant mountains and the amber glow that graces



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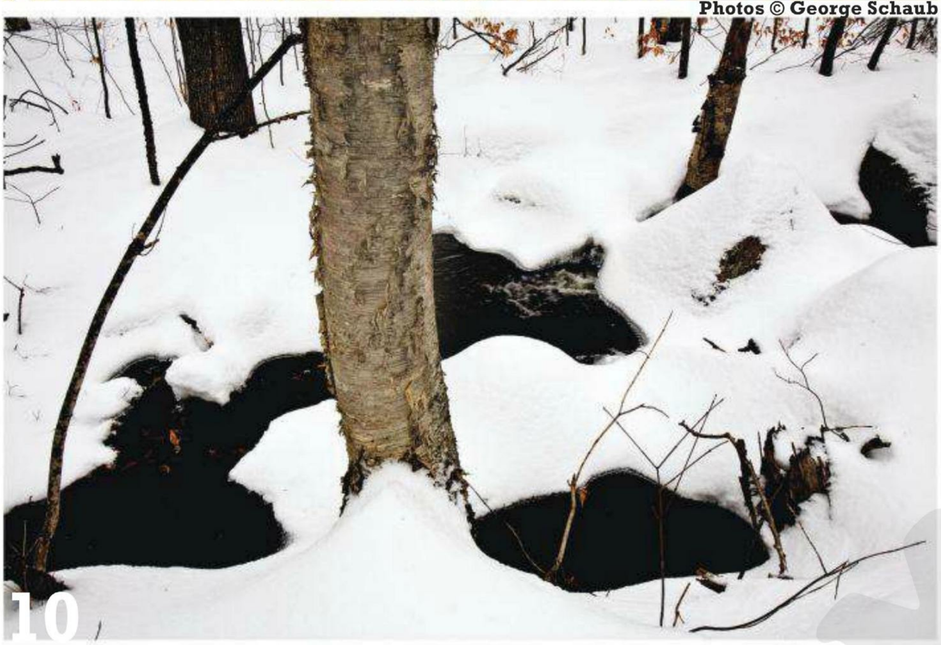

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our late afternoons. In photo (#8) the last shafts of light streak from the west illuminating the ground while the mountains are bathed in blue, a magical combination that combines 2 color casts of light in 1 frame.

There are numerous color controls in your camera, but to be able to use them to their fullest potential you should first appreciate how the color of light can have a strong effect on your images. That way you can use light in a way that enhances each and every frame.

Work objectively, think subjectively.

Photography is both a subjective and objective experience. The objective side is in measuring the light and understanding the tools for manipulating it; the subjective side is in deciding how to manipulate those tools to serve the look of your image.

You could think of photography as blending science and art. The scientific side requires you to learn the difference between how you and the camera perceive and handle light, the limits of the recording material and how various image effects are achieved. The artistic side is how you apply those considerations to your photographs and how you use them to interpret the scene. Both of these images are subjective interpretation: the spring foliage photo (#9) was made through a Lensbaby (www.lensbaby.com) optic with a low contrast and +1 exposure setting; the snow scene (#10) was made using a high

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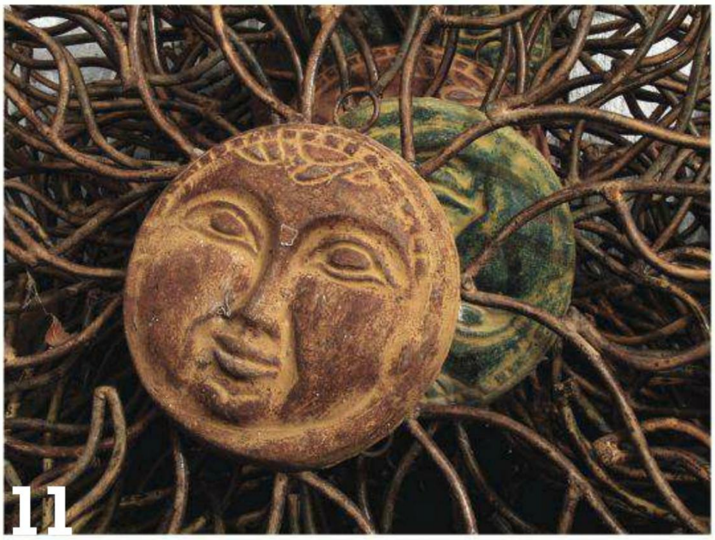
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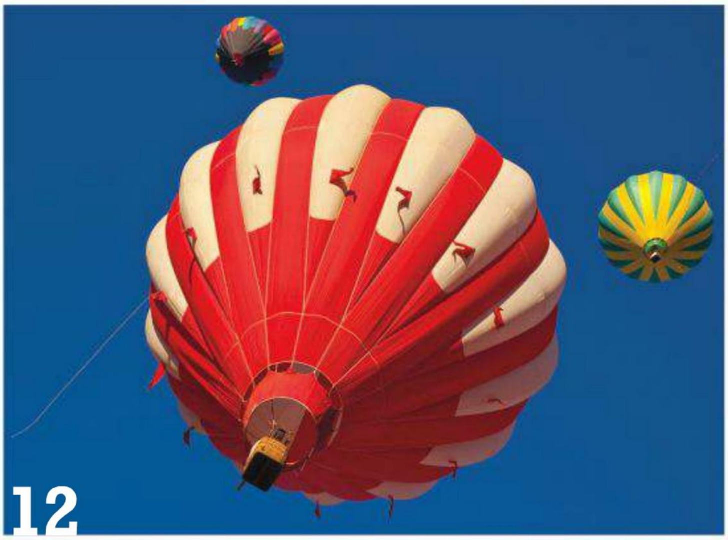
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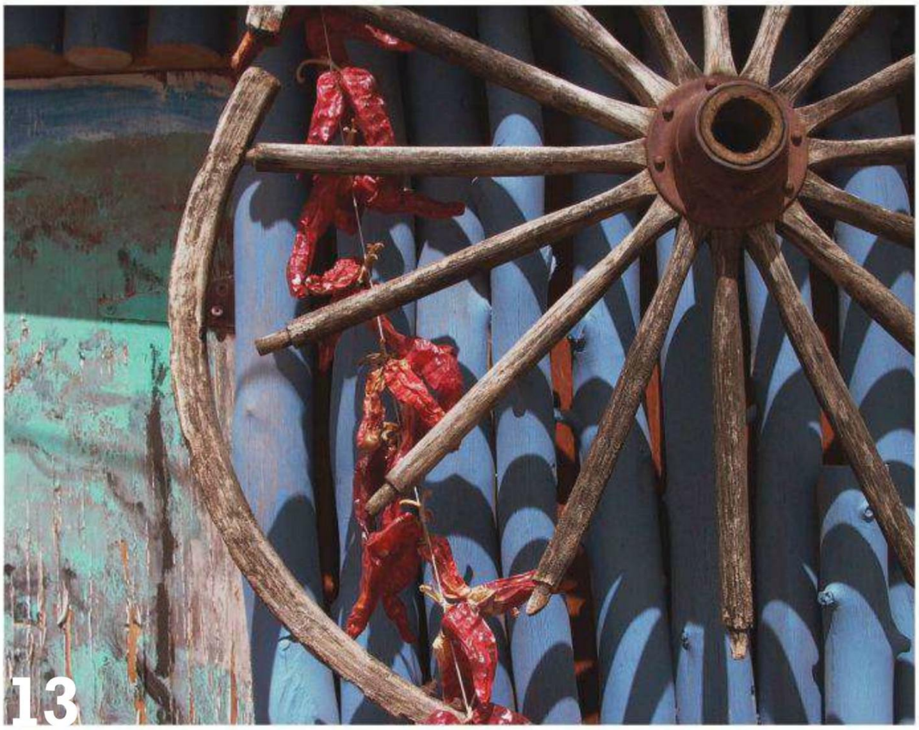
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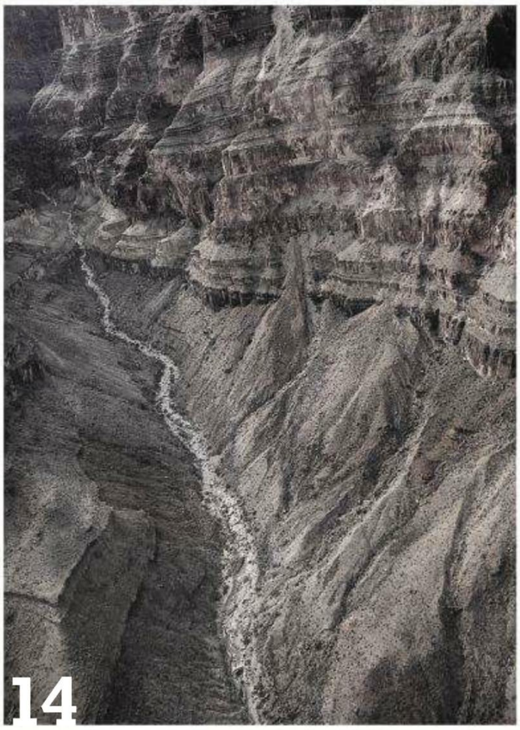
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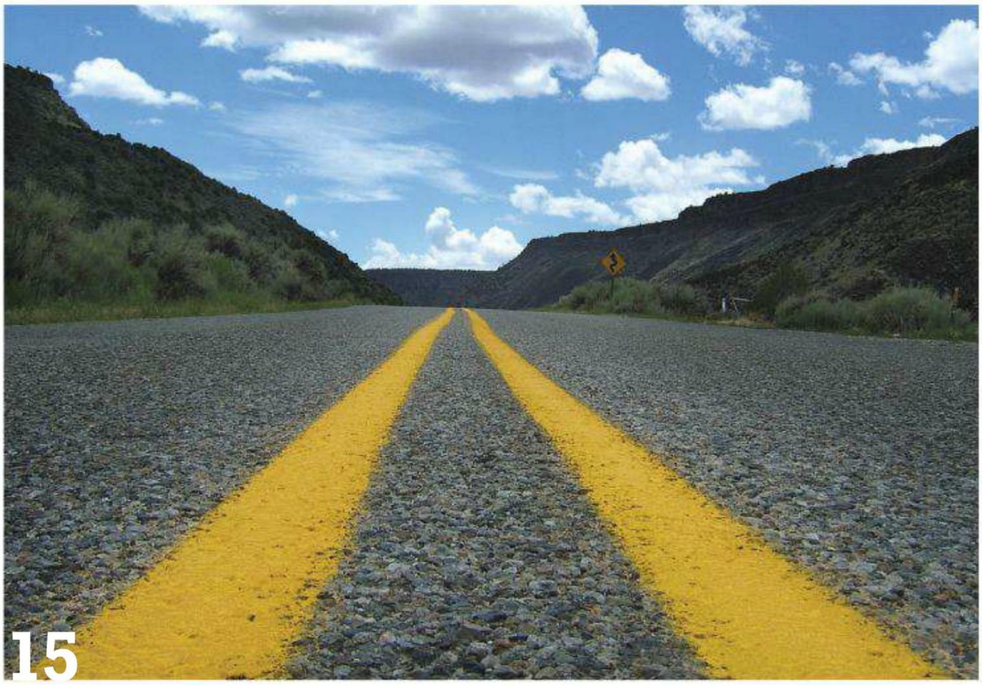
contrast and -1 exposure setting in the camera. Both are interpretations of the scenes, a subjective vision using objective tools.

Consider using "classical" compositional tools. Certain shapes and lines have always been considered effective compositional tools. They catch the eye by providing iconic forms, lead the viewer into and through the frame and provide a visual context for the content in the image. Among these tools are strong shapes (triangles, semi-circles, repeating forms) and lines. The S-curve and the leading line or lines that brings the eye through the frame or out to a vanishing point on the horizon. These shapes and lines add a dynamic sense of dimension to a photo.

Here are some examples: Repeating shapes are illustrated in the metal objects and hot air balloons, (#11 and #12). The semi-circular shape of a wagon wheel is countered by the vertical lines on the wall behind it,



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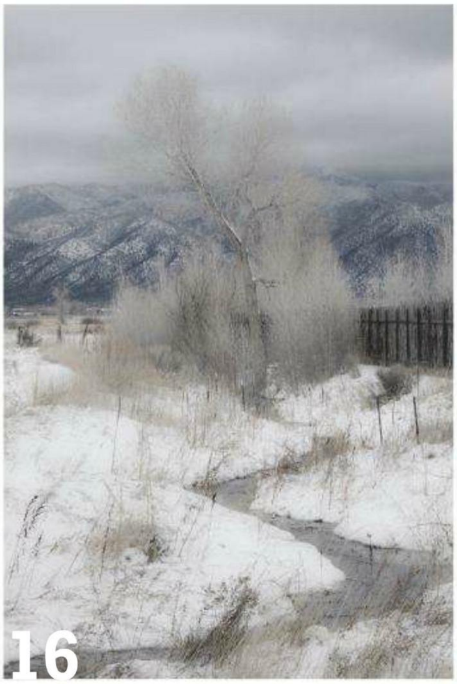

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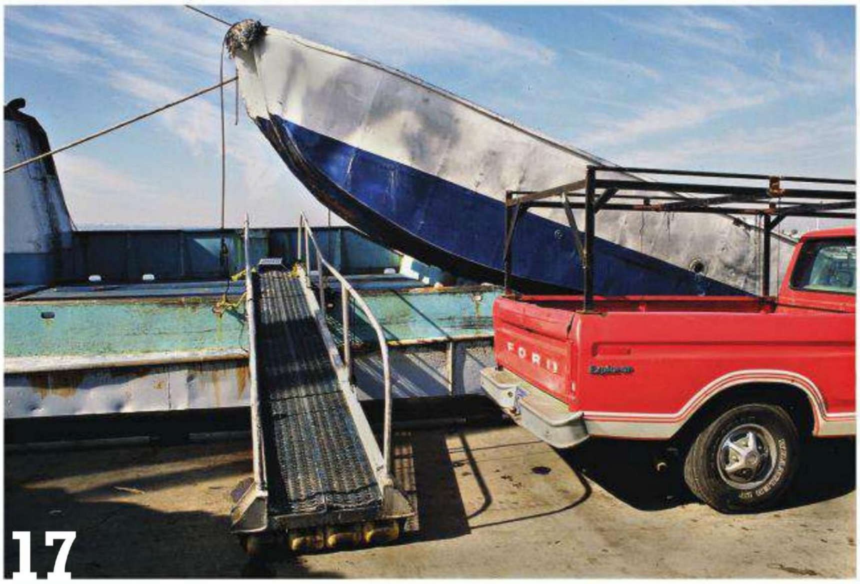

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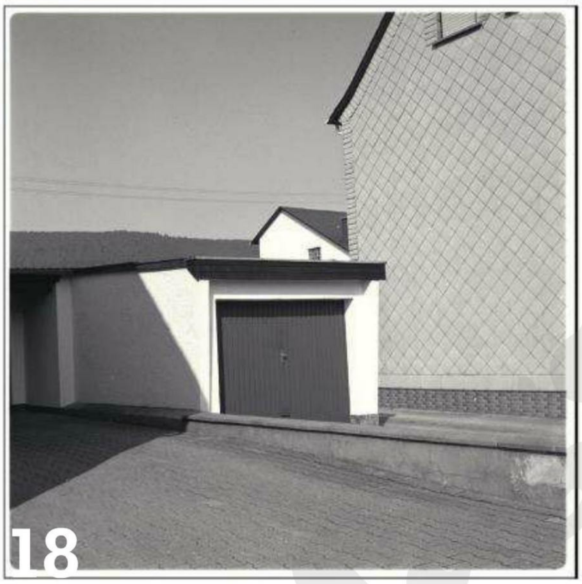

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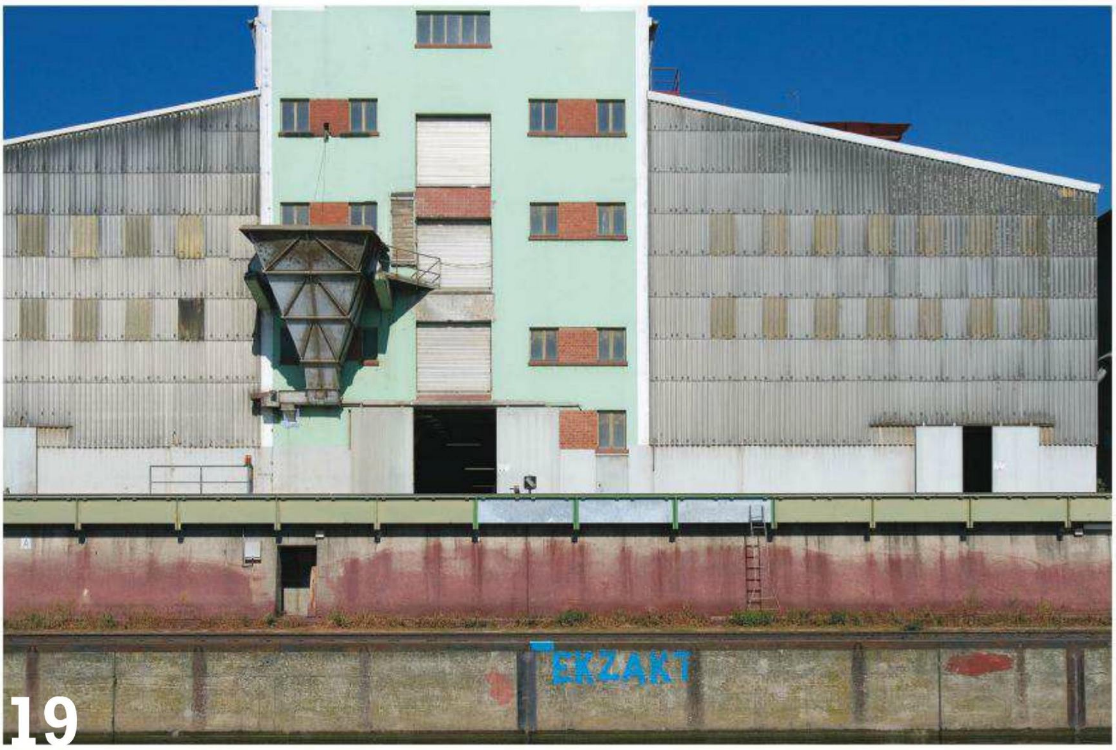
(#13). A small river runs along steep canyon walls and leads the eye through the frame, (#14). A double yellow line stretches down the road and vanishes at the horizon line, (#15). An S-curve is formed by a stream in this wintery landscape, (#16).

Practice composition using "still" subjects.

Static subjects allow for time to consider the interplay of shapes and lines. Take the time to set your camera on a tripod and work with color, lines and forms to create a sense of balance within the frame. Each of us has our own "internal" sense of composition—take the time to find yours.

A subject as seemingly mundane as this dockside scene contains an intricate group of forms, colors and lines, (#17). This black and white image is a study in both formal arrangement and wide tonal range, (#18). This warehouse along an industrial canal is framed in classical compositional manner and is a study in balance



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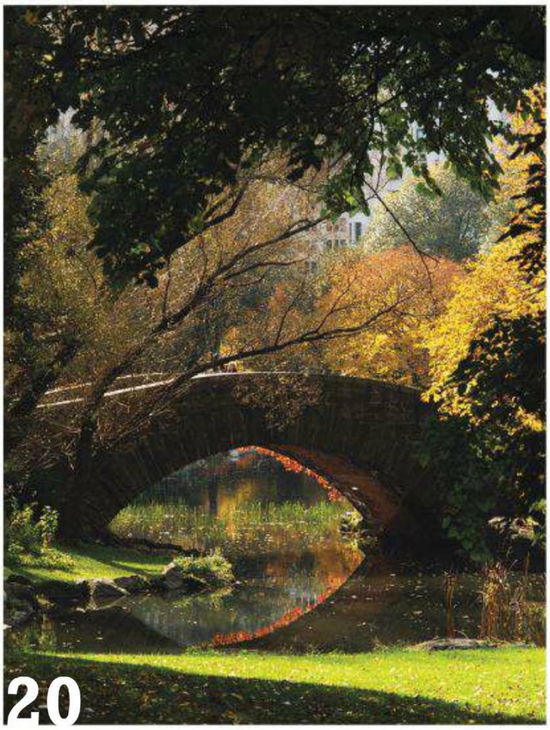

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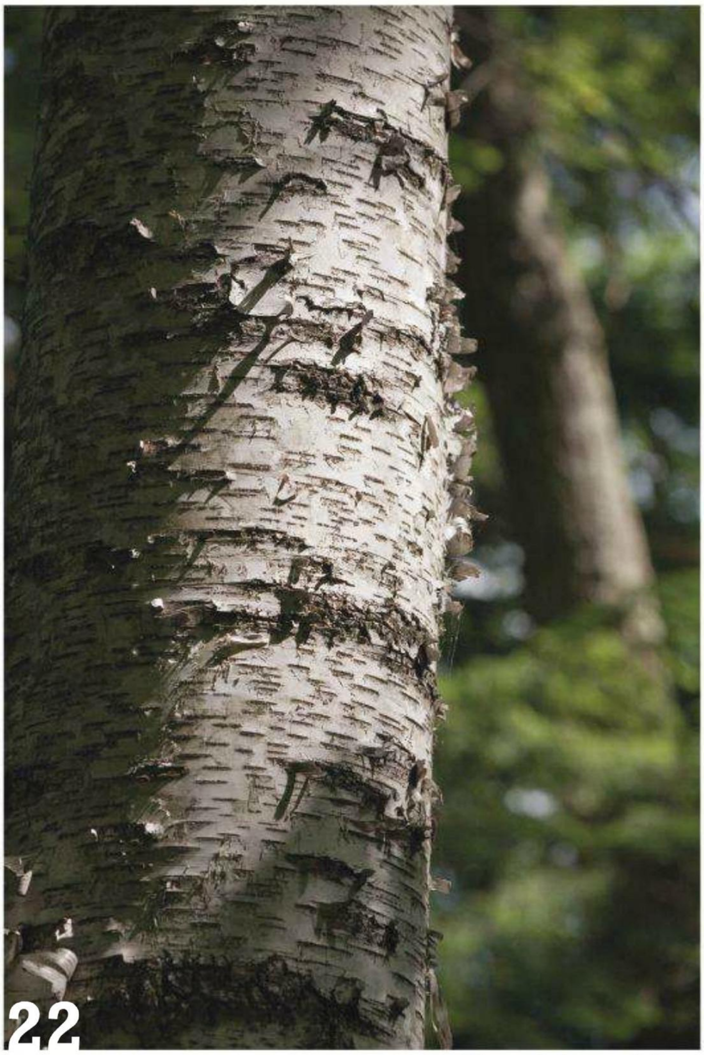
and line. The entire composition seems to act as a brace on the edges of the frame, (#19).

Work with directional light.

Light from the sun is absorbed and reflected, dispersed and diffused and moves in and around objects and subjects, both animate and inanimate. Though light is derived from that one source it has a direction, an angle at which it strikes those objects that change their character and meaning. As photographers we should not be passive in our observation and use of light; rather, we can move to change our point of view in relation to it and wait out the light as it moves. It takes patience to do this but it is an effective way to achieve images that resonate with a special presence. This late day photo in New York's Central Park (#20) highlights the colors of fall, the sweep of the footbridge and its reflection.

Use light to enhance texture.

When lit from directly above, the texture of any subject is subdued. Lit from the side, however, each difference in surface topography is emphasized; each fiber in a weave



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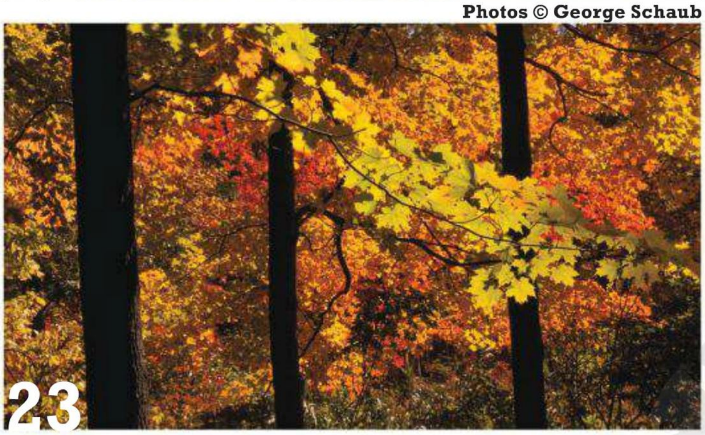

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is revealed. Known as cross lighting or side lighting, this strong angle of light is used to emphasize detail and surface texture. Cross lighting occurs early or late in the day, when the sun is low in the sky. It skims across a surface and offers selective illumination, defining shadow, thus shape, on any object, such as in this close-up of a frozen pond surface that shows how ice "feels" (#21), and this cross lighting that emphasizes every textural element in the bark of this tree (#22).

Choose backlighting to enhance color.

Consider this photo of trees blazing with the bright colors of autumn, (#23). When photographed with the light falling on the leaves, the colors are revealed, but move so that the leaves sit between you and the light source and the color really pops. Think of a stained glass window in a cathedral, where the view from the outside is so much less brilliant than that inside the church. You wouldn't think of only photographing those windows from the outside—think the same way about any translucent subject and you'll

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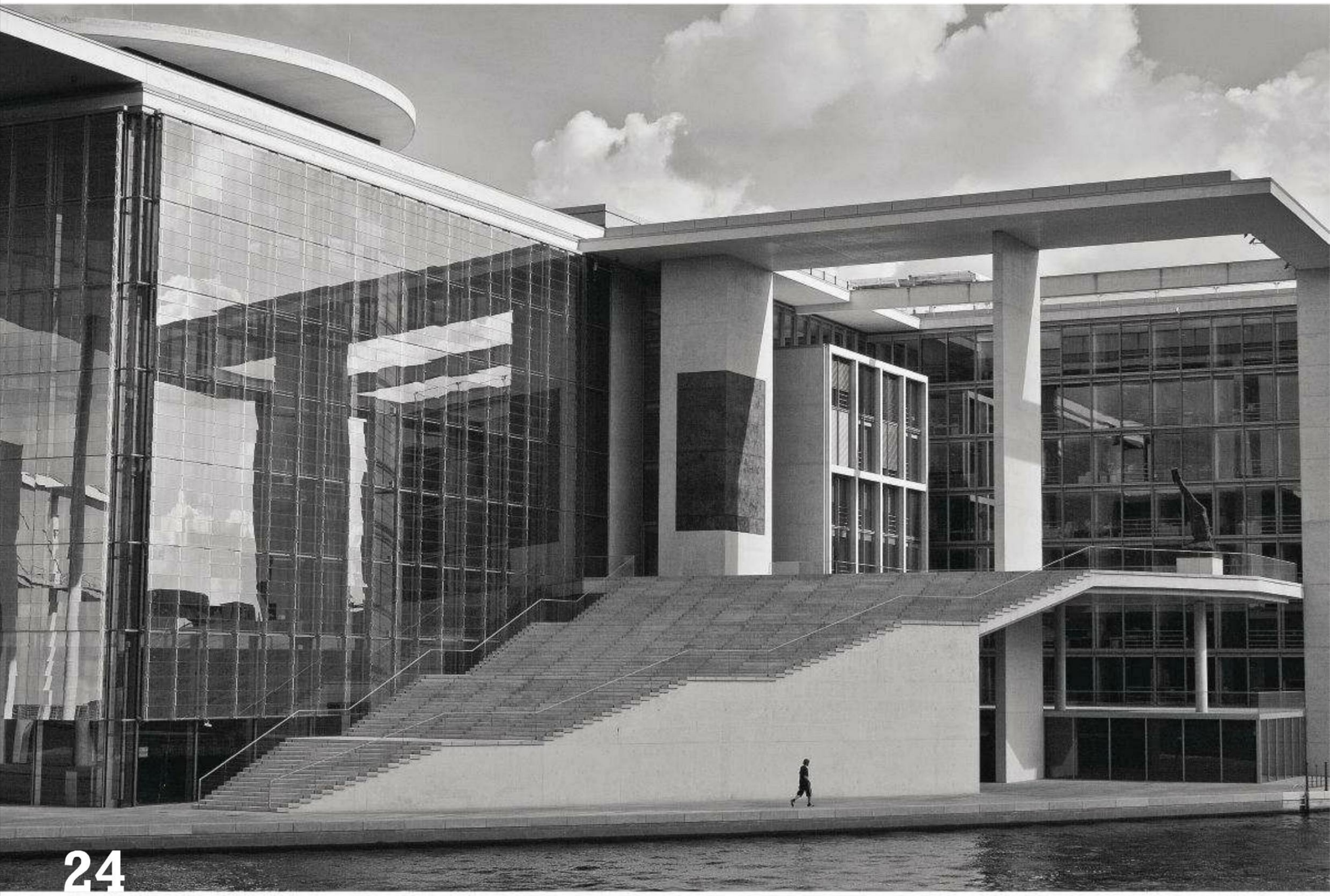

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be amazed at the results.

Look for reflective fill.

Reflective fill is any light that bounces off a surface to add light to areas that would otherwise sit in shadow. You can see reflective fill in cities with glass and steel skyscrapers; in fact, they often provide the only daylight into the canyons they create. The same goes for narrow slot canyons in the West, where light bounces from a shaft of light on an opposite wall to suffuse the canyon with a soft glow. Or it could simply be a white wall on the sunny side of the street. This photo of government buildings in Berlin (#24) was made at a time when light reflecting off the glass panels filled shadow areas that would otherwise be too dark and lose detail. Shooting this scene without reflective fill would create an entirely different image. ■

Try these compositional exercises:

1. Look at your own work and seek out forms. Begin to recognize how they play a part in your compositions.

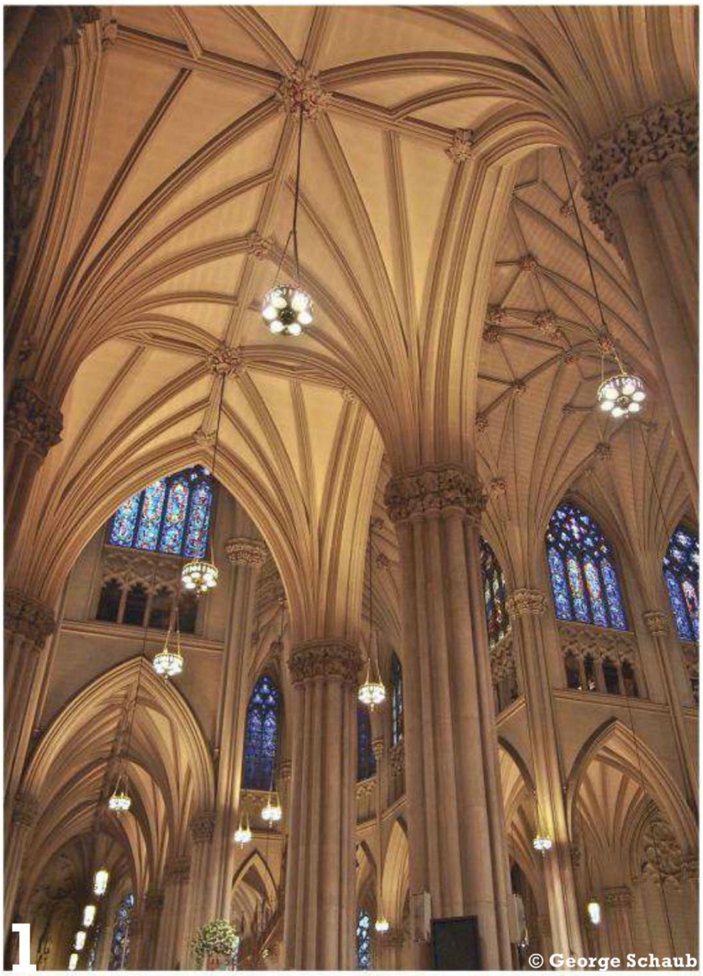
2. When you shoot, arrange subjects in the frame so that they create simple geometric forms. Try “bracing the box” with form and line.

3. Move around your subject and appreciate how different points of view alter the dynamic interplay of shadow and light.

4. See how depth of field (what’s sharp and unsharp) alters your main subject’s relationship with the rest of the image.

Choosing And Using Lenses

Create A Unique Point Of View



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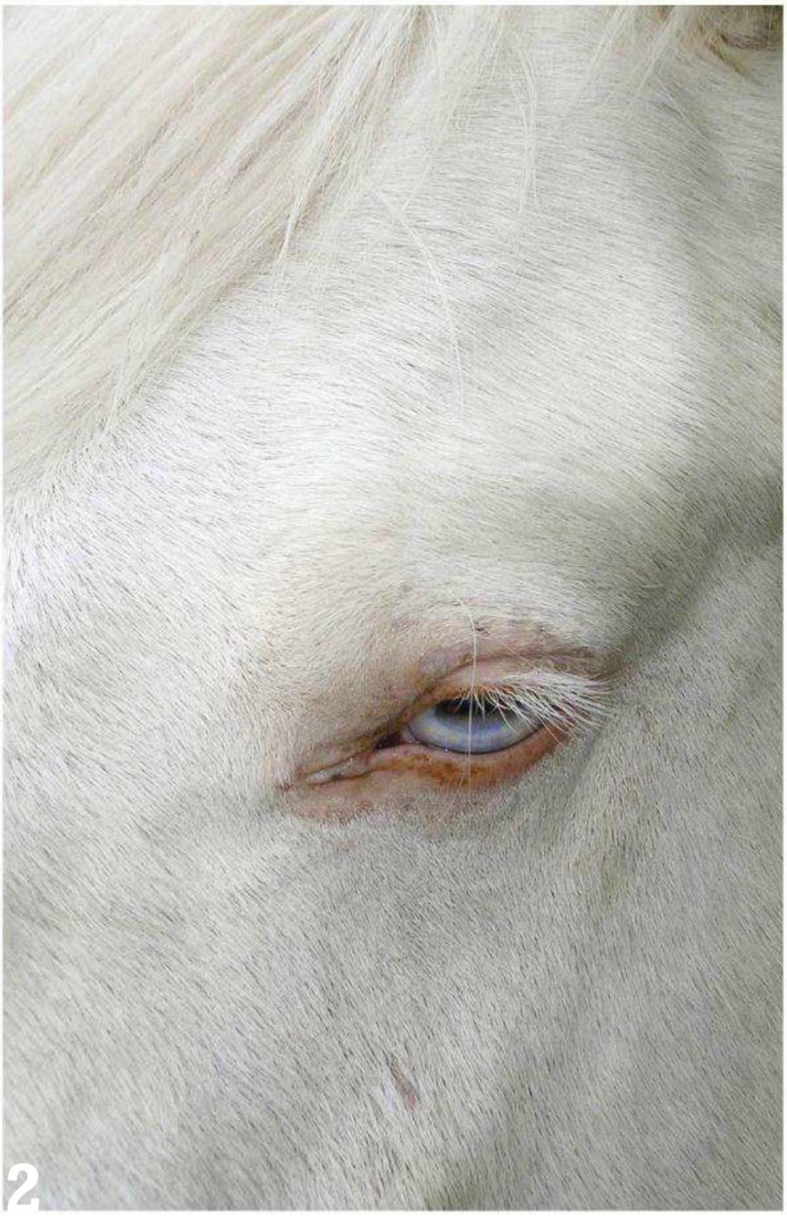
One of the main tools we have for creating visual effects are lenses, the photographer's eye on the world. Every choice of lens has implications about what you can and cannot include in the frame, how subjects within the frame relate to one another and how we use aperture settings and focal length to create a special point of view. In this chapter we'll explore lens choice as well as lens controls that are essential to creative photography, including depth of field and focusing options.

Along with exposure, good focusing technique and utilizing various depth of field effects can have a profound influence on the success of your photography. With depth of field you can pinpoint what will be sharp and unsharp in the frame, showcasing the main subject against a "soft" background, or creating images with sharpness from a close subject to faraway objects. It is a way to create content within context, a unique tool available to the photographic "eye."

Use enhanced "peripheral vision."

The peripheral vision a lens yields is referred to as its "angle of view." Think of angle of view as an arc that extends from your eyes as you look out onto a scene without turning your head. Use it as a way of choosing the focal length of a lens to use for each subject and scene.

A lens with a lower focal length number yields a wider arc; the higher the number, the more that arc narrows. Wide angle lenses (like a 24mm lens) can expand your normal peripheral vision; super-wides and fisheyes verge on the surreal, like in this photo of a cathedral interior made with a 15mm lens (#1).



2

There's no way the eye could take this entire scene in with one glimpse. The price paid for this is often distortion, with edges bowing and an exaggerated sense of space.

Know the minimum focusing distance of your lens. How close can you get? Some telephoto lenses make you back off from subjects, although their ability to bring distant subjects closer compensates somewhat for having to stand back. Specially made Macro lenses allow you to photograph within inches. If you enjoy working close-up be sure to know the lens's minimum focusing distance. In this photo a telephoto lens (150mm) was used to keep the horse from being startled by a close camera (#2). The minimum focusing distance was 4 feet but the lens brought the subject closer, allowing focus to be set on the horse's eyelashes.

Use image stabilization for low light shots. Vibration Reduction, Image Stabilization or whatever the individual manufacturers call it can be helpful when shooting handheld in low light or with a long telephoto lens. Some cameras have image stabilization already built in and don't need a special lens to achieve the benefit, but in all cases you have to choose to have image stabilization on, as it is usually not the default setting of the lens or camera. This photo was made inside the Currier Art Museum in Manchester, NH with a 105mm lens that would ordinarily require 1/125 sec shutter speed for a steady shot (#3). The exposure was 1/15 sec and is steady thanks to the IS feature of the lens. Most camera and lens makers claim that using IS will gain 4 steps of shutter speed in steadiness; just to be safe 3 is a good bet.

There are a number of "modes" for VR. Mode I, or the "Normal" mode covers handheld shots when you are on steady ground. But what if you are on a moving platform? That introduces an entirely different form of motion that the system has to counteract. For that you use what many systems call Mode II, or "Active." Take note that the caveat in the past had been to always turn off VR when shooting off a tripod. Some of the newer lenses and bodies now can "sense" that a camera is mounted and turn off the VR automatically, so there's no need to always check.

Use "stacking" effects.

3

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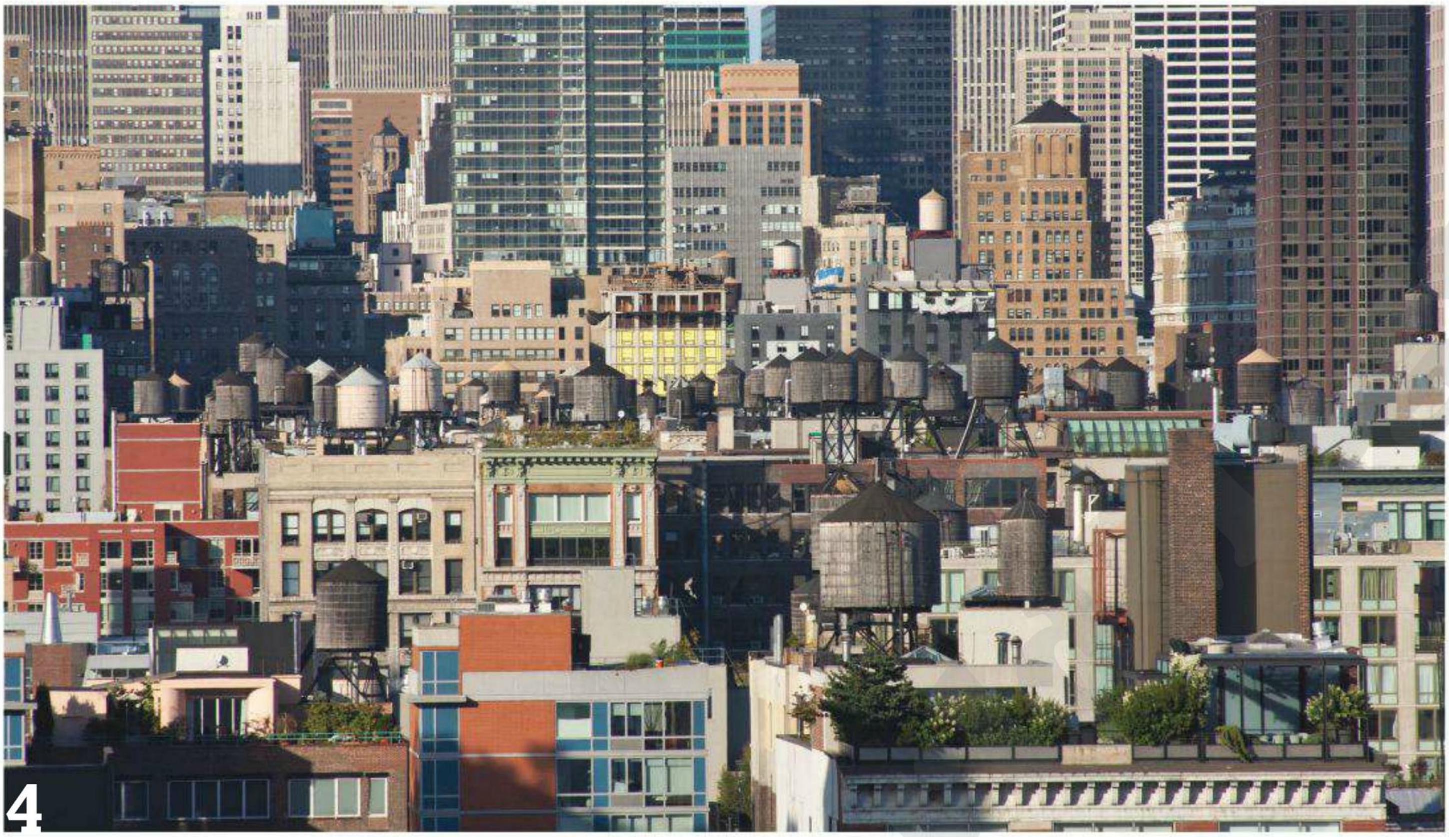

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The visual effect of stacking is when objects that are fairly distant from one another are made to seem as if they are bunched together or "stacked" within the frame. This visual effect is achieved with long-range telephoto lenses because of the way they both bring distant subjects closer and "pick out" a small portion of the view before you. In this New York City scene (#4) made with a 200mm lens the distance from front to back

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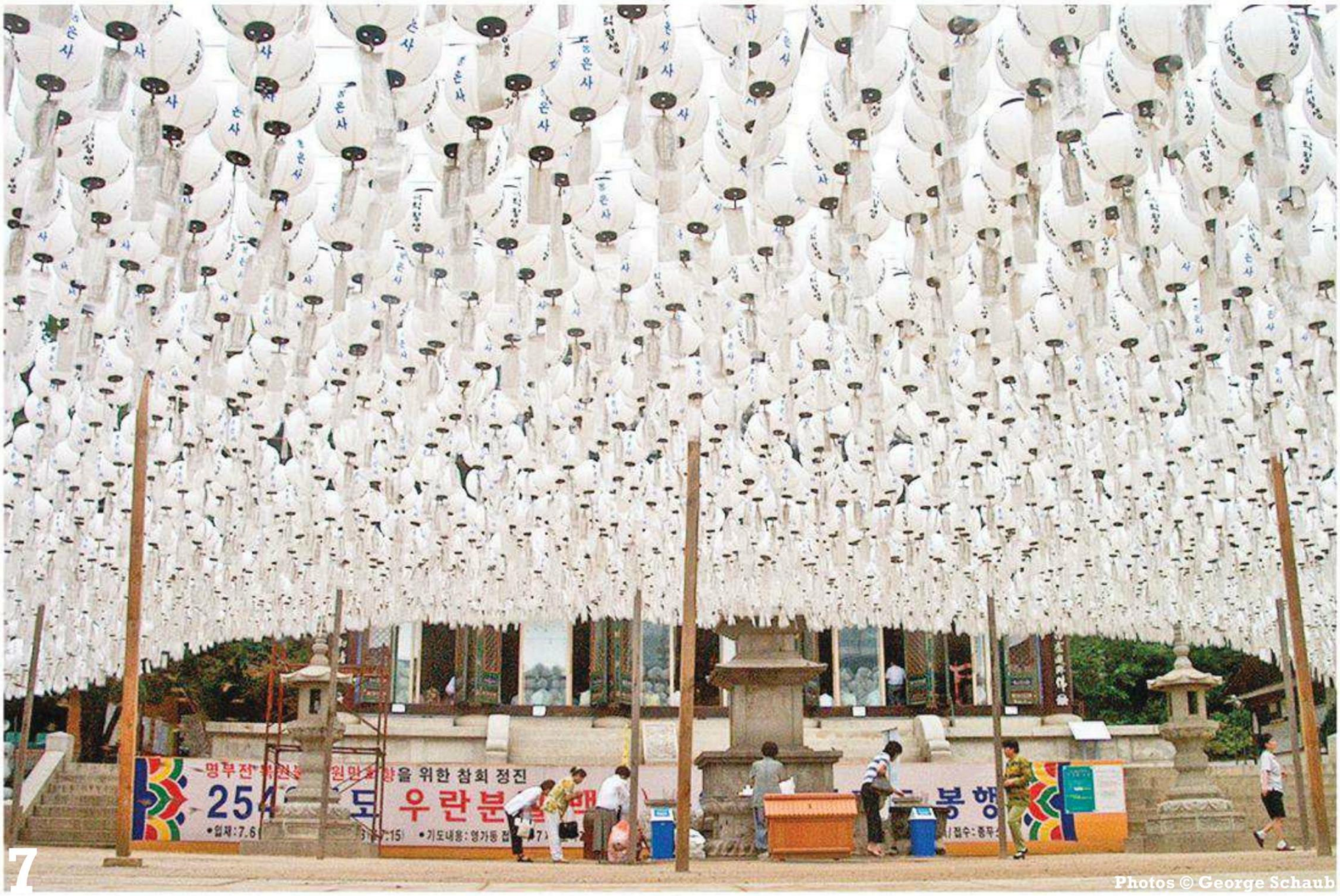

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covers almost 30 blocks, yet the buildings and the water towers seem to sit on top of one another.

Use foreshortening.

When you work close to a subject with a wide angle lens and use a narrow aperture to maximize depth of field you can create an effect know as foreshortening. The wider the angle of the lens, the narrower the aperture (given you focus on the closest, main subject) and the closer you are to the subject the greater the effect. You can see this in the photo of a boat in dry dock in Nova Scotia (#5), where the bow becomes exaggerated and the house in the background seems tiny, and in the photo of the silver fire hydrant (#6) where it seems as large as the building behind it.

Tilt a wide angle lens.

How you point a wide angle lens will affect its tendency to stack, foreshorten or exaggerate space. For example, to increase the feeling of distance from foreground to background when using a very wide angle lens tilt the lens up, as was done in this photo of a temple in Seoul, Korea made with a 20mm lens (#7). The lanterns seem to dominate the frame with the people seeming small in the distance, all an exaggeration created by pointing the lens upward while keeping the horizon straight at the base of the frame.

Tech Tip

Focal length and the arc of vision.

Focal lengths are often grouped according to their angle of view. Here's a general breakdown of those categories:

12 (or less)-24mm: Super wide, extends the view beyond peripheral vision, may have distorted edges (bending lines); "fisheye" and lenses below 8mm yield an almost surreal point of view.

28-40mm: Wide angle, slightly more peripheral vision than normal (in the 28mm range) with much less or no distortion.

40-70mm: Normal point of view, no distortion.

70-150mm: Moderate telephoto, a little distortion of subject relationships and slight tunnel vision.

200-400mm and up: Telephoto to super telephoto, distinct tunnel vision (narrow angle of view) and a severe "cropping" of normal vision.

Tip: Note that throughout this issue focal length is expressed in equivalents to 35mm frame size. When working with D-SLRs other than full-frame models (pro cameras) multiply the focal length number on the lens you work with by approximately 1.5X, with Micro 4/3rds cameras by 2X, and with digicams about 4X. Thus, a 12mm lens on a Micro 4/3rds camera is effectively a 24mm focal length and on most D-SLRs (non-"full frame") about 18mm.

WorldMags

Play with bokeh.

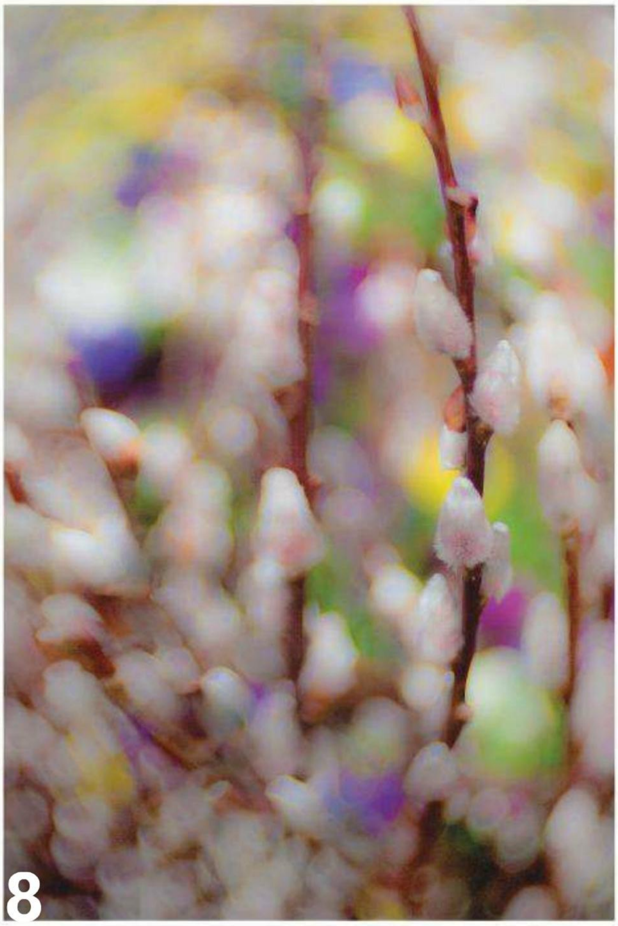
While sharp focus is important in many photos, photographers have created an aesthetic around the creative use of out-of-focus areas and have even given it an "artsy" name: bokeh, which is Japanese for fuzzy. Whatever you call it, those unsharp areas can create a painterly background for any subject, converting real forms to abstract shapes and colors.

In essence, unsharpness is "forced" by working with long range lenses at wide apertures, with tilt lenses that exaggerate the unsharpness (one of the more popular ways of doing this is working with Lensbaby optics, www.lensbaby.com) and by using close focusing lenses at wide apertures positioned close to the foreground subject. This photo was made with a Lensbaby with focus on only one stalk of the plant (#8).

Create "deep" depth of field.

"Deep" depth of field means that everywhere the eye looks in the picture is sharp. While there are reasons to soften backgrounds, a deep depth of field creates a powerful sense of place and context for all subjects within the frame. The subjects may be similar or disparate, close up or far away, but deep depth of field can give equal weight to everything in the scene.

This photo of a statue (and the buildings behind it) in Bamberg, Germany (#9) was made with a 24mm lens and an aperture of f/11; the focus was set to ensure both the statue and the background were sharp. Likewise, this photo of a tent flap and the myriad of balloons in the background at the Albuquerque Balloon Festival (#10)



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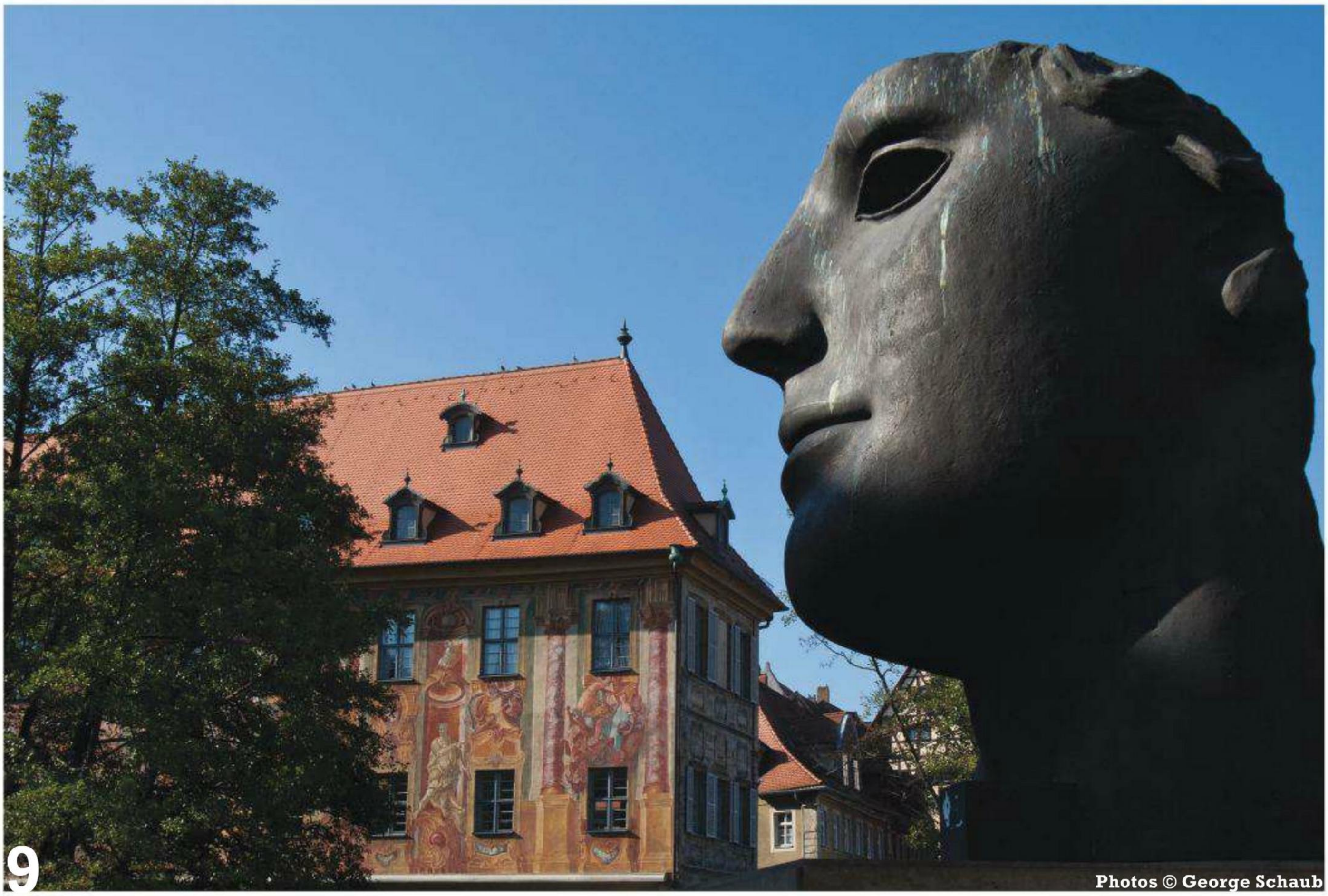

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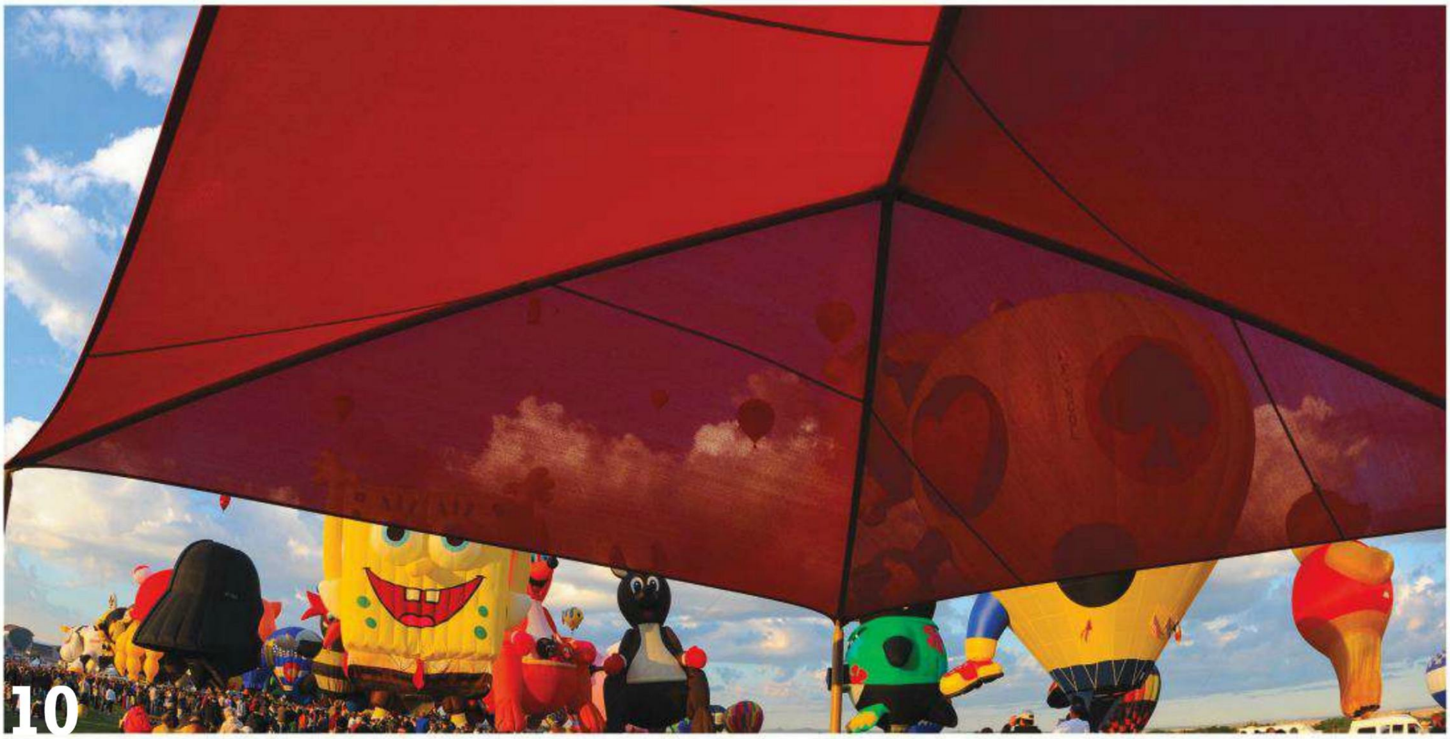

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11

was made with a 16mm lens set at f/16, bringing both close and far into focus.

Use a wide angle for shallow depth of field.

While wide angle lenses are often thought of as tools to get as much of the field of view sharp as possible, you can also use them for great shallow depth of field effects. The trick is to get as close as you can to the foreground subject (wides usually have a very close minimum focusing distance) and set as wide an aperture setting as the lens allows. This photo of fall leaves (#11) was made with a 16mm lens at f/2.8, which made for a painterly background effect.

Get close.

When focusing close the initial point of focus is critical; poor focus on the foremost areas often ruins the shot. Examine the frame when you work to make sure you have acquired focus

Tech Tip

A shortcut to picking the best handheld shutter speed.

Unsteady pictures are usually throwaways, and the chief cause of unsteadiness is shooting at too slow a shutter speed when working with a handheld camera. The easiest way to figure the best handheld shutter speed is to use the 1/focal length rule.

Make the longest focal length of the lens the denominator in a fraction where 1 is the numerator. For example, shooting with a 300mm lens would give you a minimum shutter speed of 1/300 second (go up a bit to be safe and shoot at 1/500 second). This rule does not apply when shooting with a super wide angle lens like a 12mm; usually, a 1/30 second shutter speed is minimum for most people with any lens. What about using image stabilization lenses or using a camera with a built-in image stabilization system? You can safely add 3 steps to the shutter speed rule. In other words, if you are shooting with that 300mm lens (with 1/500 sec being “safe”) you can shoot with IS at 1/60 sec.

In general do not to go below 1/15 second with any handheld shot. And keep in mind that when figuring the proper speed to add the multiplier effect to the lens in use. For example, if you are using a 200mm lens with a Micro 4/3rds camera, the applicable focal length for this formula is 400mm. And if you are working with a zoom lens use the longest focal length on the zoom as the guide; for example, 1/125 sec for a 30-110mm zoom.

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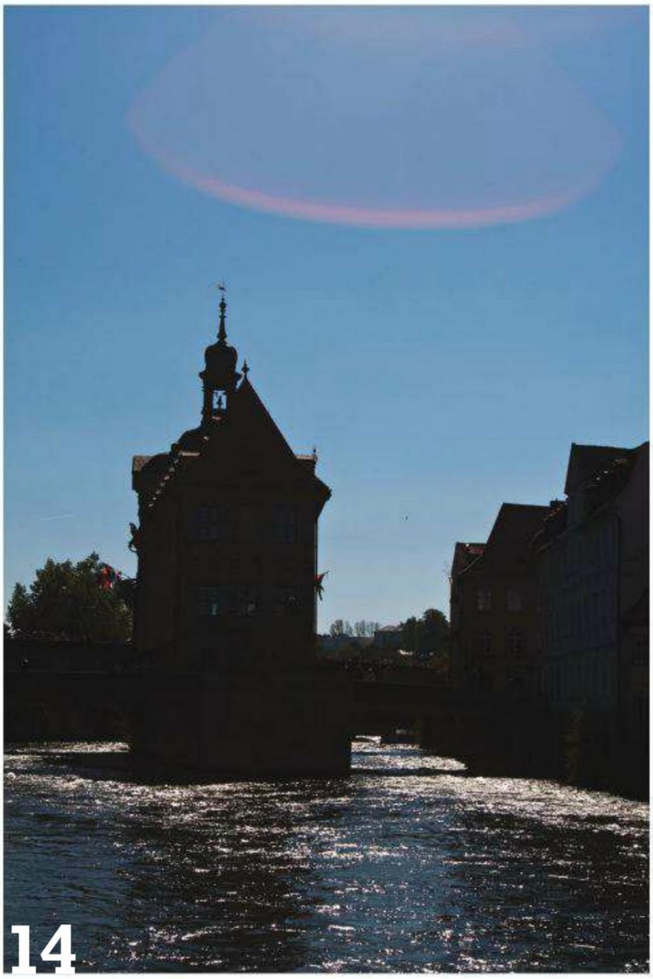
Tech Tip

Tips for deep depth of field effects.

1. Use a wide angle lens. The wider the lens (the shorter the focal length) the greater the depth of field for any given aperture or camera to subject distance. If you use a telephoto lens be sure to set a narrow aperture to ensure that all subjects in the frame are as sharp as the lens and settings allow and that focus is set at the closest subject.

2. Be sure to focus on the foreground subject. If you have to back off to do so and crop later, that is fine.

3. Use as narrow an aperture as you can, given the lighting conditions. The narrower the aperture, the greater the depth of field for any given focal length and camera to subject distance.



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on the correct area and do not allow the focus to shift away from the closest subject. Keep in mind that most cameras will "seize" the closest subject to focus upon, but only if that subject falls within the camera's focusing target areas.

To help ensure good results, keep in mind that shooting at the narrowest aperture on the lens yields the deepest possible depth of field, critical to get focus from the front to the back of the scene. This photo of fall leaves in a pond (#12) was made from only a few inches way; the focus was grabbed and then locked on the foreground leaf, and a narrow aperture of f/16 ensured sharpness throughout.

Watch out for too many focus points.

To us this looks like a stand of birch trees in the snow (#13)—to the focusing system in a camera it looks like a lot of confusing and tempting targets. There are 2 ways to work here. You can switch to manual focus, using as narrow or as wide an aperture as you want. Or, you can set the center AF target and place it over the foreground tree until it lights up to confirm focus, lock focus, recompose and expose.

Avoid flare and ghosting.

Flare is one of the main causes of poor image quality. Flare is caused by light entering the lens at an oblique angle or from a "point source", such as the sun or an open (unshaded) bulb. Flare results from the light bouncing around the internal parts of the lens and creating a flaw of light that can affect image contrast and color reproduction. (Obvious shapes formed by flare are sometimes called "ghosts", but sometimes flare manifests itself as a kind of veil over the image.)

The most obvious course is to avoid pointing the camera directly at a strong light source. But shooting with a lens hood or shade attached to the lens, which blocks stray sidelight, is highly recommended. This will help increase image quality substantially. The lens flare here (#14), the pink ribbon in the sky, results from shooting toward the sun, a problem that could have been avoided by using a good lens shade. ■

Tech Tip

Tips for shallow depth of field effects.

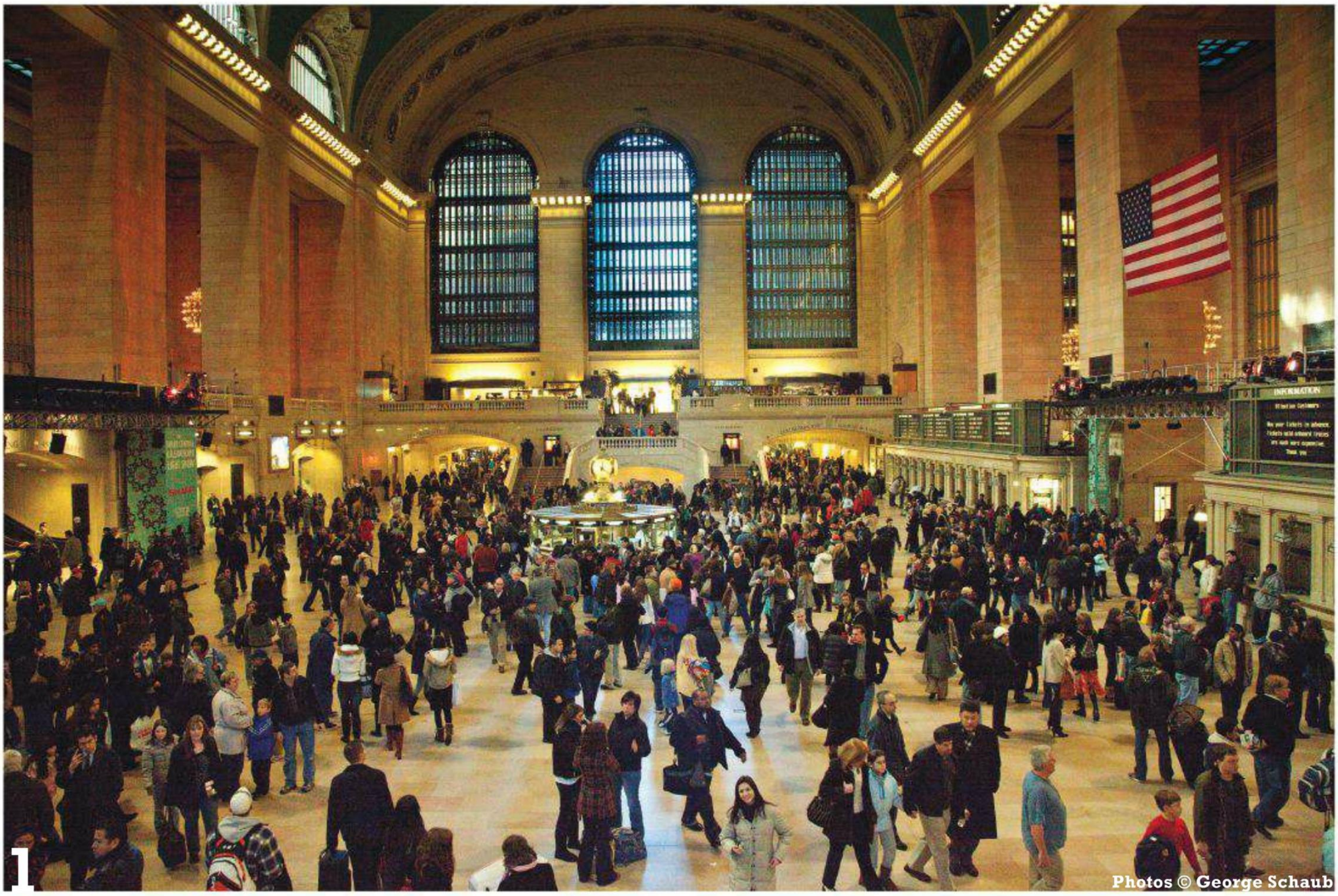
1. The longer the lens (the focal length) the less the depth of field for any given aperture or camera to subject distance.

2. The closer the distance between the (focused foreground) subject and the camera the less the depth of field for any given focal length or aperture.

3. The wider the aperture the less the depth of field for any given focal length and camera to subject distance.

Exposure Techniques

Modes, Patterns And ISO Settings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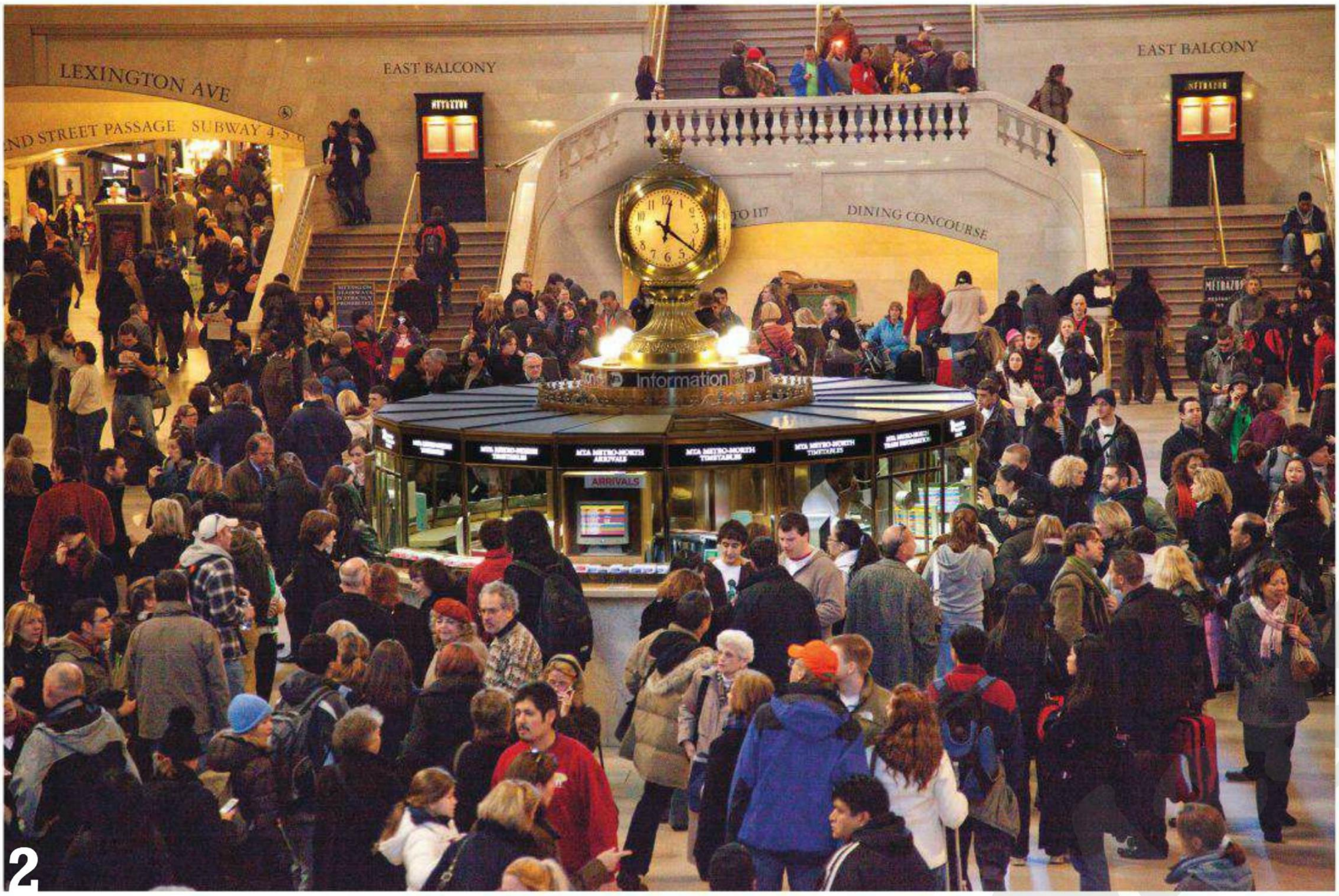
Exposure systems in digital cameras are highly sophisticated components that can analyze light, contrast, color and all the aspects of a photo instantly. Yet with all the automation and computerization there's still the need to understand how to get the most from all the available options, to know when to choose a particular mode or metering pattern, when you can rely on automation and when you need to step in to get the best exposure possible. This set of tips deals with the creative use of the various Exposure modes, metering patterns, bracketing features and more.

Low light strategy: Use a high ISO.

Digital cameras can be highly light sensitive. You can set a very high ISO—or light sensitivity—and change it to adapt to the light at hand in every frame. If you find



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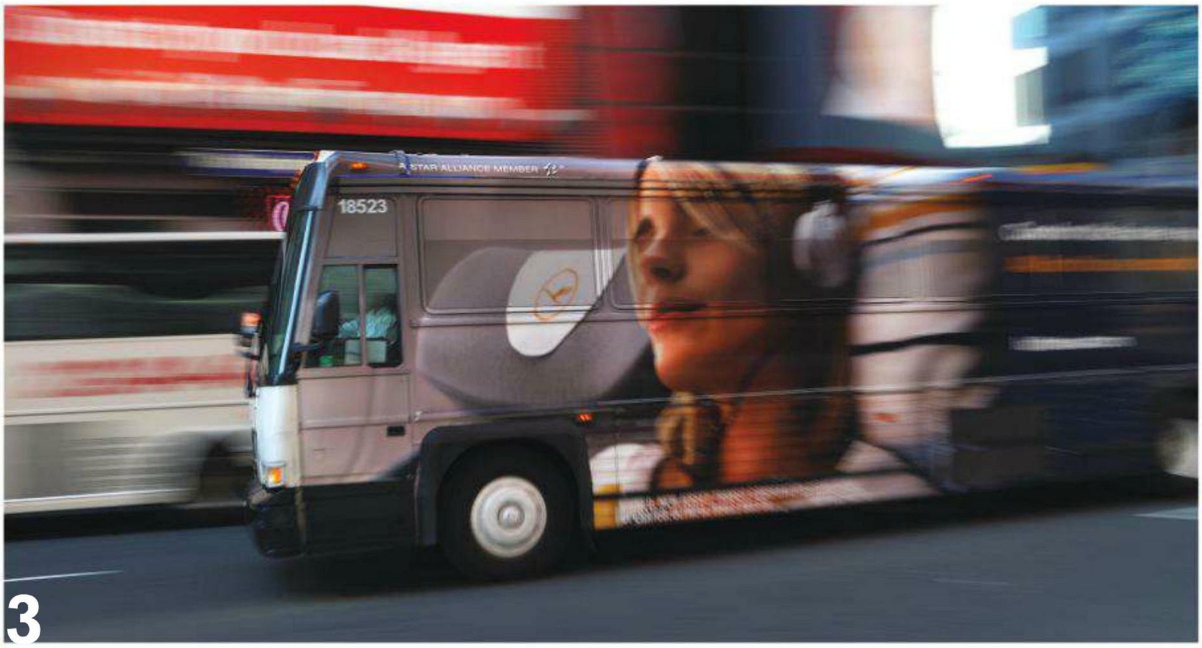
that your pictures are shaky in low light because you cannot work with a fast enough shutter speed, raise the ISO and gain more shutter speed freedom. Every time you raise the ISO 1 step, from 100 to 200, you gain a step in shutter speed, from 1/15 to 1/30 second. Raise it to 400 and you'd get a 1/60 second, 800 to 1/125 second, and so forth.

There are side effects to working at high ISO speeds—increased noise and increased image contrast (with accompanying loss of color fidelity)—so use a high ISO judiciously. These handheld photos taken inside New York's Grand Central Terminal (#1 and #2) were made at ISO 6400 and an exposure of f/6.3 at 1/100 sec.

Pan with a subject in motion.

Panning is a technique that combines a slow shutter speed with moving the camera in tandem with the



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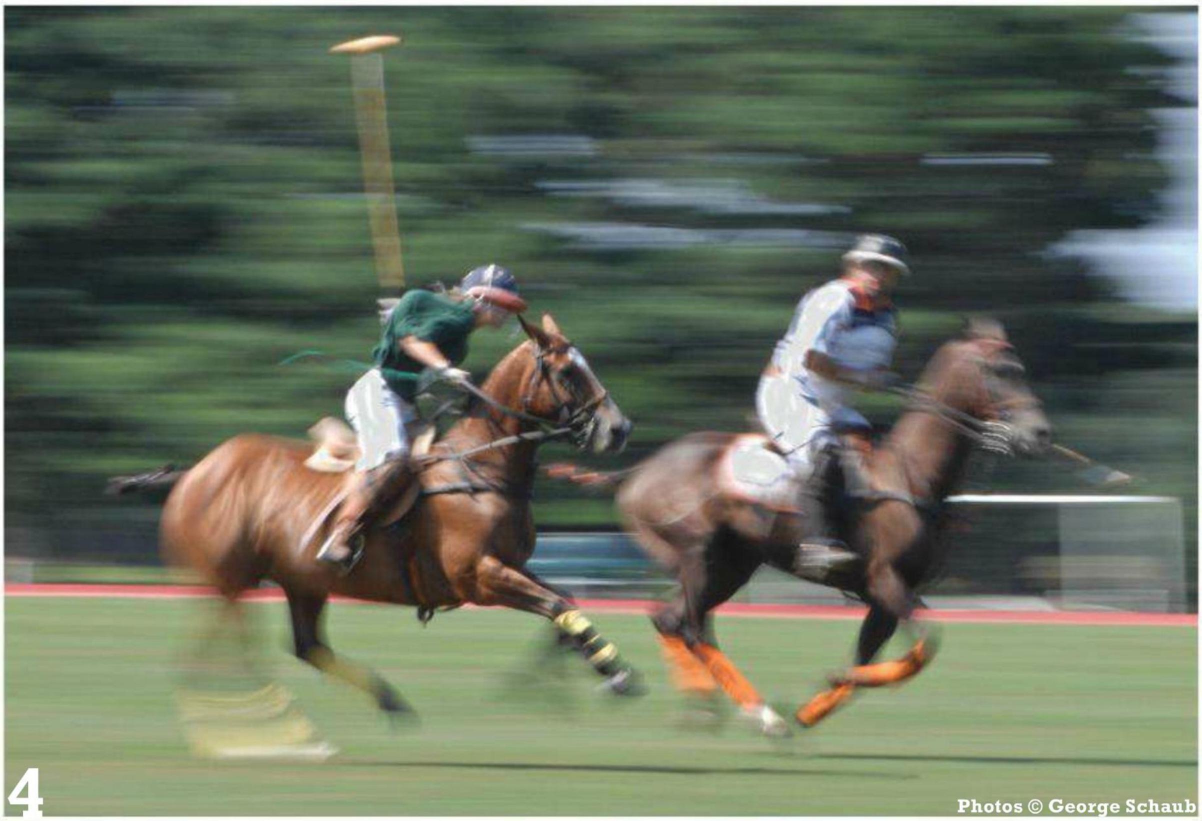

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motion of the subject. This results in the main subject looking more or less static while the background becomes a blur. That's how this bus zipping down New York's 7th Avenue (#3) and these polo players (#4) were caught in action, with the implied motion supplied by the background blur.

To get these shots use TV or S, Shutter-Priority mode, to set a slow shutter speed, starting at about 1/15 second and going slower as you test the effect. It takes some practice but after a while you'll get a feel for when to release the shutter as the subject goes by and how to use a kind of follow-through motion to keep the subject in the frame as you work.

The main issue you may run into when going for this effect is too bright a light level to be able to get as slow a shutter speed as you want. First, lower the ISO to the lowest number, or light sensitivity. If the scene is too bright you might "run out" of aperture to control exposure. If so, try shooting in a spot where the light level is lower (shoot in the shade). Or, you can place an ND (light-reducing) filter over the lens.

If you can shoot using a tripod and panning head so much the better, but shooting handheld, as was done for these photos, can be fun, if a bit more challenging.

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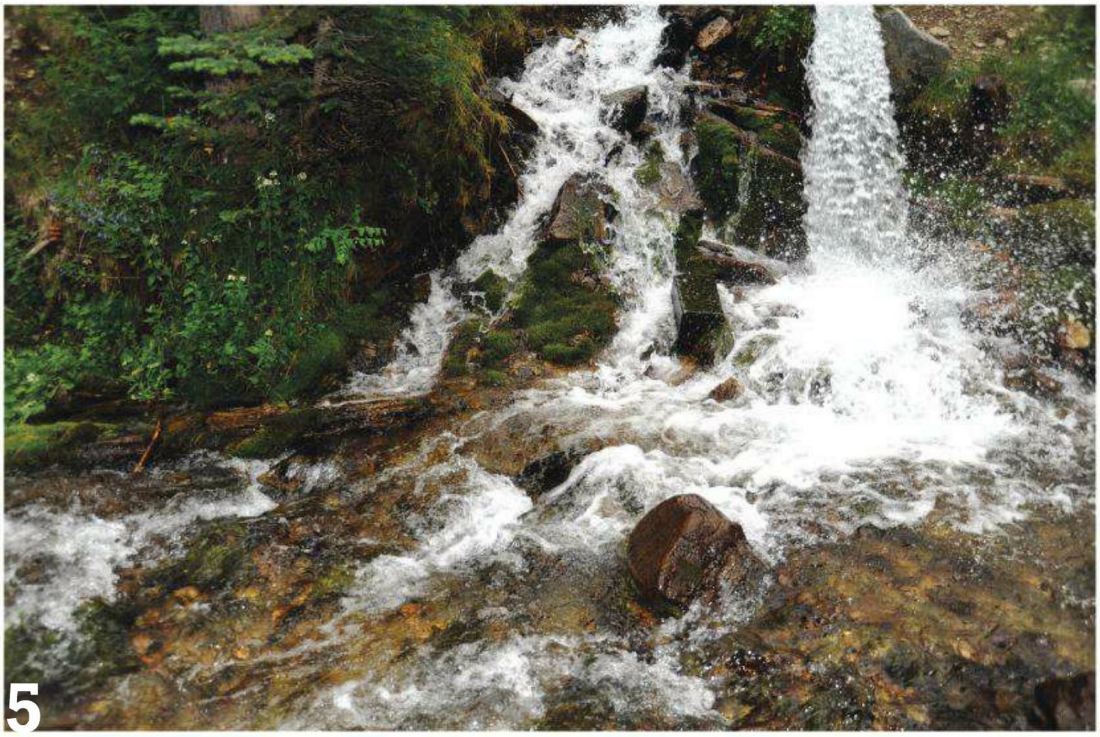

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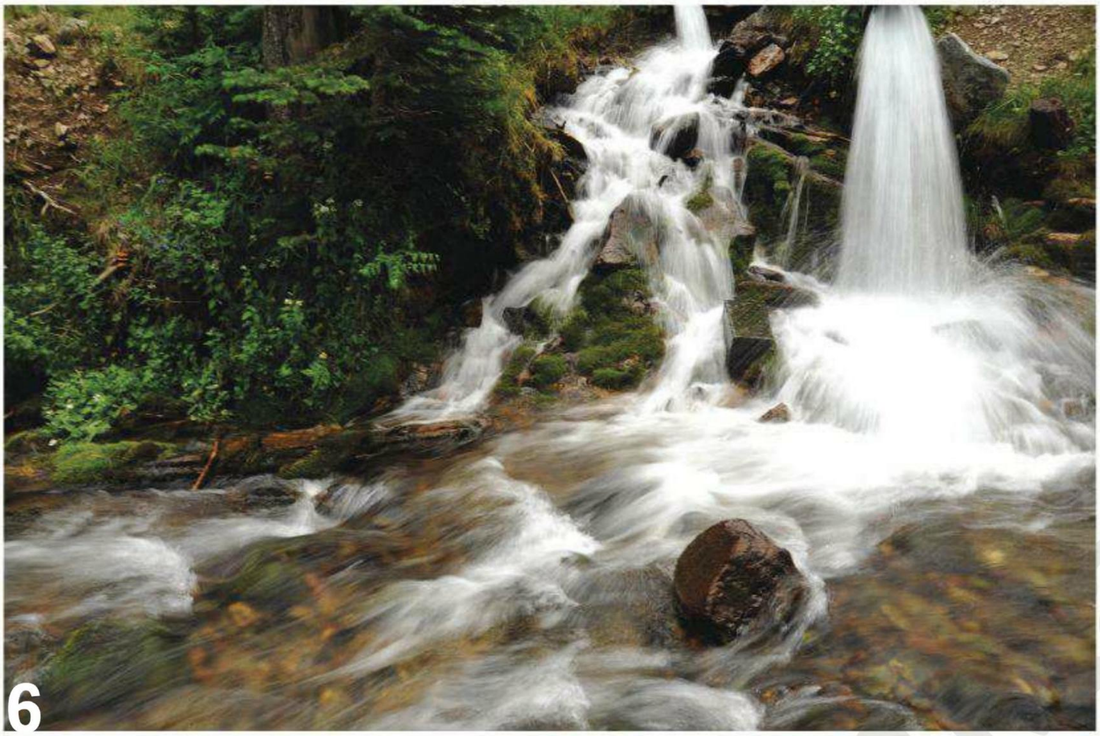


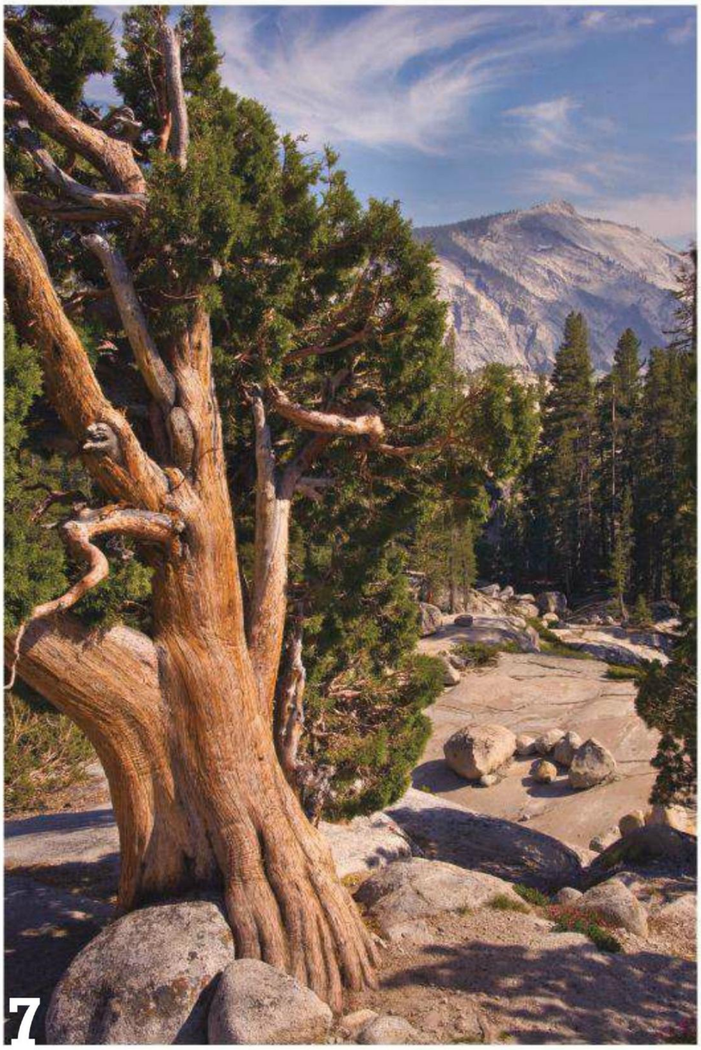
Use the Program Shift mode.

Some photographers think of Program exposure mode as "Snapshot" mode, or for using your camera as a "point and shoot."

Program mode is actually quite sophisticated. When making exposure calculations it takes into account the ISO, the focal length of the lens, whether or not the flash is activated, the minimum shutter speed necessary to get a steady shot given the lens on the camera and more. Program can also be used as a way to have complete control over image effects without using Aperture- or Shutter-Priority exposure mode using an option known as Program Shift.

Once the camera makes a reading in Program you can turn a control dial or command dial to shift aperture and/or shutter speed. If you change aperture, the camera will automatically change shutter speed to make up for the gain or loss in light, and vice versa. You can use Program with any of the metering patterns.

In many ways, Program is one of the easiest Metering modes to use. You can shift and make adjustments using equivalent exposures on the fly, depending upon what image effect you need or desire. This method was used in these 2 photos of a small waterfall—(#5) shows all the droplets at 1/250 sec and (#6) shows the water flow



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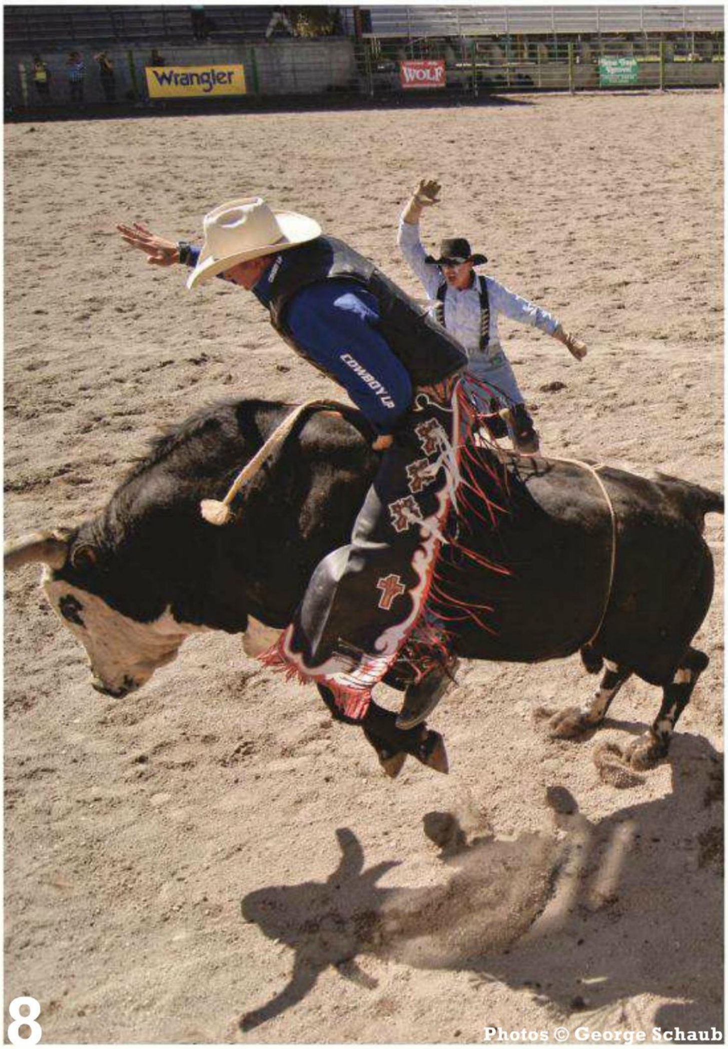

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effect at 1/8 sec. Shifting in Program mode yielded an aperture of f/2.8 and f/16 respectively, maintaining the same overall exposure while shifting the image effect.

Shoot landscapes with Aperture Priority mode. Aperture settings contribute to what is sharp and unsharp in the photograph. It is 1 of 3 variables that determine depth of field.

In some cases you'll want to make the entire background sharp to give the subject context. In others you might want to pinpoint the main subject by unsharpening the background, or at least making the background a less detailed part of the image.

Because many landscape photos rely on a deep depth of field to show focus from the foreground to the distant background, Aperture Priority is often referred to as the "Landscape exposure mode." This photo (#7) was made in AV mode with an exposure of f/29 at 1/80 sec. Focus "began" at the closest rock in the foreground and stretched all the way to the distant mountain and sky (infinity).

Capture the action with Shutter Priority mode. Choose Shutter Priority mode when you want to capture the action of fast moving sports or any photo where split-second shooting is key. Simply set the Exposure mode dial to "S" or "TV" (for Shutter Priority/ Time Value) and test out the shutter speed that you think you might need to freeze the action.

For some sports 1/500 second will do—for really fast moving sports a shutter speed as high as 1/2000 second is required. If you need more light sensitivity to get those speeds always remember that you can raise the ISO to "buy" more shutter speed. The photo of rodeo action (#8) was made at 1/1250 sec; the goalie's save (#9) was shot at 1/1500 sec.

When to use the Center-Weighted Averaging (CWA) metering pattern. Center-Weighted Averaging reads light from all parts of the viewfinder, with 70 percent of the exposure calculation weight coming from the center of the frame and the remaining 30 percent of the calculation from the edges of the frame. It is called "averaging" because it takes in all the various brightness levels and then averages them to what is called a "middle gray" exposure reading.

The key to using Center-Weighted Averaging patterns (CWA) is to include the brighter areas of the scene within the frame when you make readings, but don't just read the brighter areas.

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Tech Tip

The Case For Raw

There are 2 file formats you can use when making photographs—JPEG and Raw. JPEG is for those who want to shoot without doing much, if any, image processing after exposure, and for those who might want to print using kiosks or online services without having to process the photos. There is nothing inherently wrong with JPEG files. It is just that Raw affords so much more.

Here's why:

Raw files can be processed using Raw converter software that allows you to make changes to the image without affecting the original file, known as "non-destructive editing." You can switch the white balance, contrast, color saturation and more with ease and without causing the file to be compressed or to lose image information. You can even correct, to an extent, exposure settings.

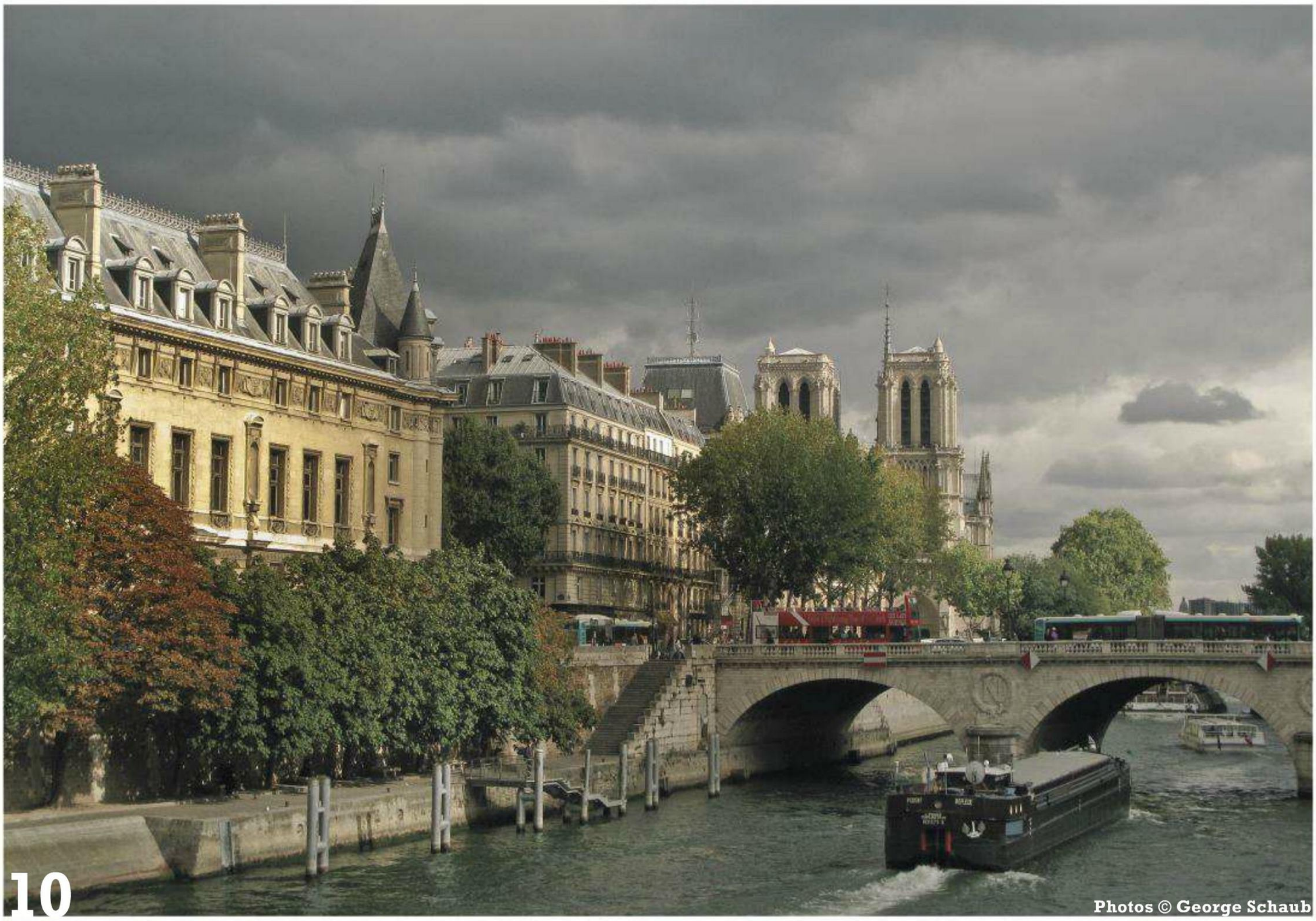
JPEG also allows you to change the look of the image file during post-exposure processing, but certain things like white balance, switching from Monochrome to Color mode and contrast corrections are less easily done or impossible to do. And, when you edit you are changing the structure of the file itself, not a set of "sidecar" instructions as you work with in Raw.

Raw files contain more image information, more colors and more light information. They are recorded at a higher bit depth than JPEGs, and more bit depth equals more information, and more information usually means a higher-quality image, particularly when making prints.

JPEG files are compressed files, which means that at the moment of exposure a percentage of image information is tossed away by the processor. Raw files are uncompressed.

However, Raw files require you to process the image prior to being able to print, send or share it. JPEG files are ready to print, send or share (given they are not too large for e-mails, etc., in which case they are easily made smaller in file size).

For the best image quality, shoot Raw. For convenience, shoot JPEG. What is the best advice? Set the camera to Raw+JPEG and get the best of both worlds.



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This is called "biasing toward the highlight" and by including both bright and dark areas in the reading area you allow the metering system to average them to get the exposure right. It takes some practice but it's a great way to control exposure.

In this photo (#10) the camera view is first shifted to make a CWA reading from the left portion of the frame. The exposure is then read and "locked" and then the frame is shifted to create the composition you see here.

Use Spot Metering for selective area readings.

The Spot Metering pattern takes a reading from a specific area within the frame. While you can change the location of the spot reading area in the finder, many photographers maintain the spot pattern as a small circular area in the center of the viewfinder (it is the default position). Spot Metering is a photographer-controlled technique, and therefore is probably the most accurate, and perhaps most challenging, way to read light.

You can use Spot Metering to pick out select portions of the scene, such as when catching a shaft of light striking a distant formation in Ghost Ranch, NM (#11), where the reading is "locked" on the sunlit formation.

Spot is also perfect when shooting snow in bright light. In this photo of a stormy sky with white-capped mountains (#12), the Spot reading was made from the bright snow and a +1 exposure compensation was added. When you use Spot on white you usually have to compensate exposure to "place" the bright white correctly in the recording range.

How to read a Histogram.

A Histogram is a graphic representation of the distribution of brightness values in the scene. It can be helpful for checking exposure and can be read on the LCD as you work to guide your exposure decisions.

If the right side of the graph is shoved up against the end of the chart's frame and especially if there are truncated spikes accompanying it, it's a good sign that your picture will be overexposed. Similarly, it reveals underexposure (loss of detail in the shadows) if the graph is shoved up against the left side.

If a large portion of the graph indicates overexposure it's a signal to decrease the exposure. You can do this by taking a reading that includes the brighter areas in the scene and locking the exposure; by dropping the exposure via the exposure compensation (minus 1 or 2EV): or by switching to Manual Exposure mode and increasing the shutter speed and/or narrowing the aperture until you move the information in the graph toward the center and away from the edge.

Take a look at these images and their Histograms (emulated using Photoshop's Levels panel). This is just

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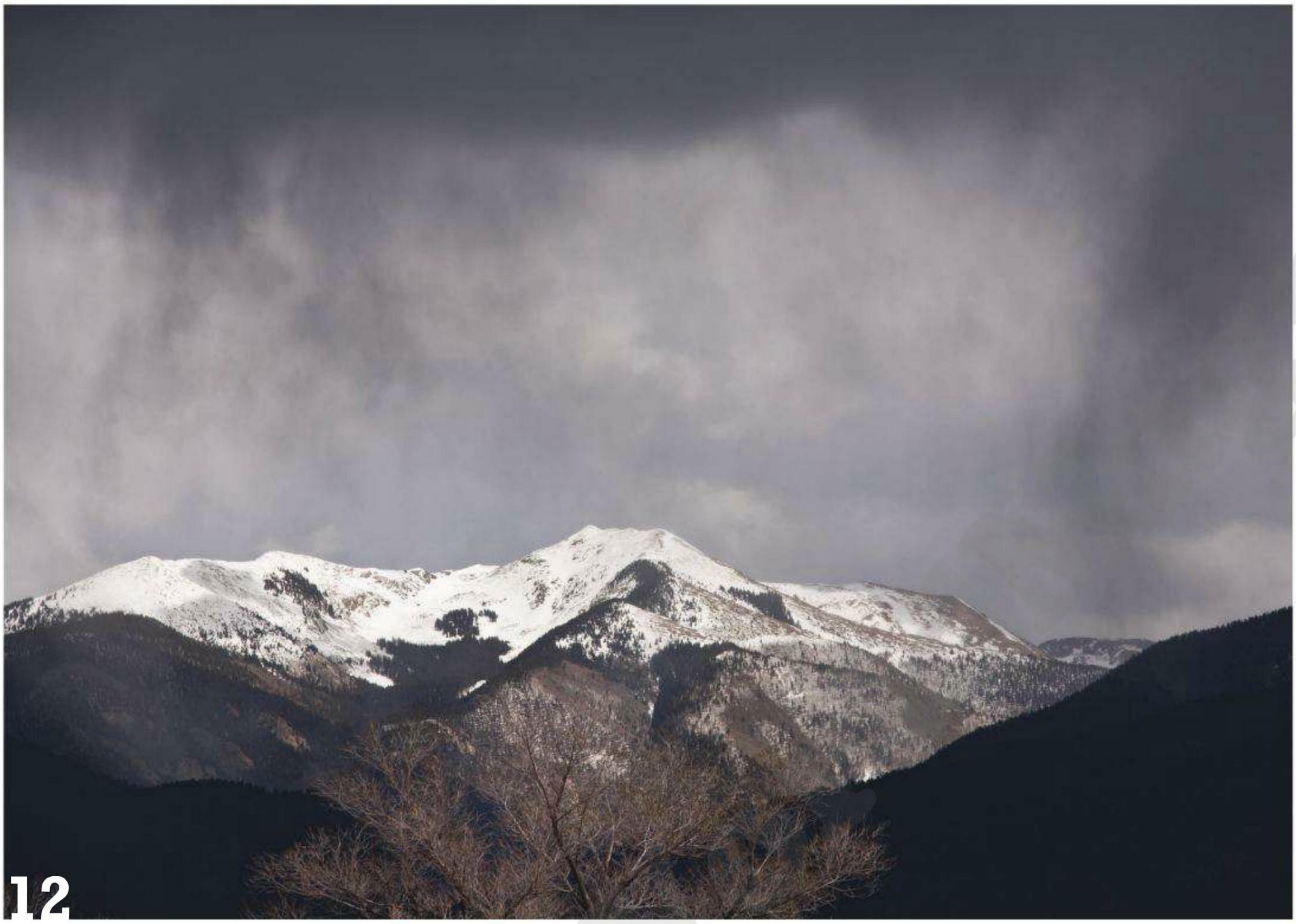

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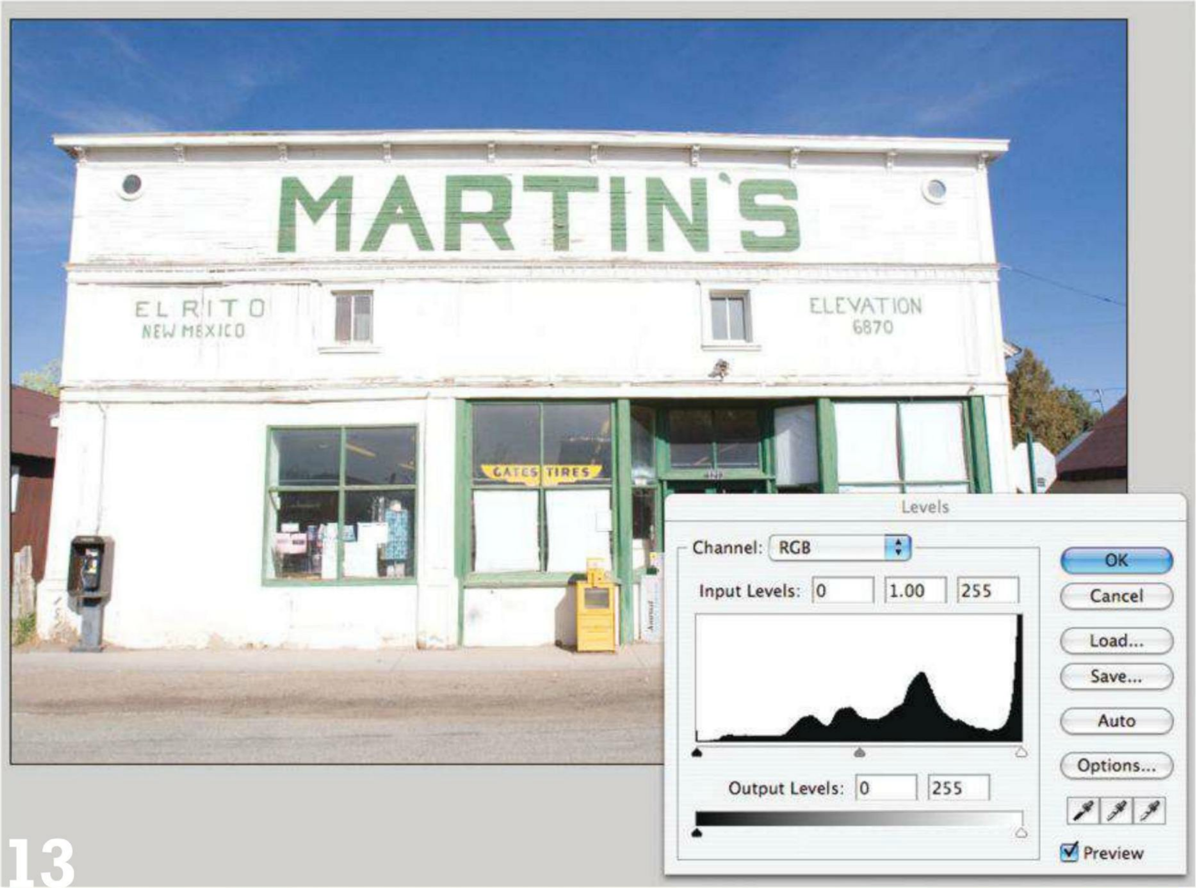

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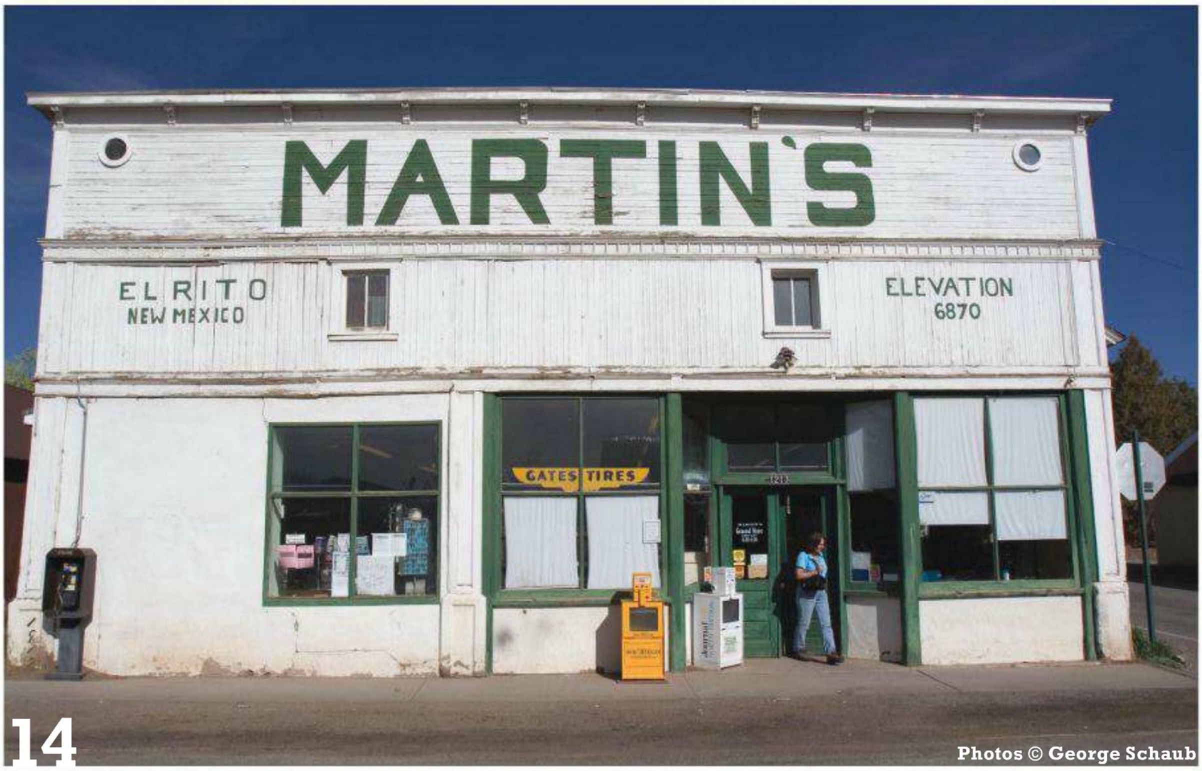

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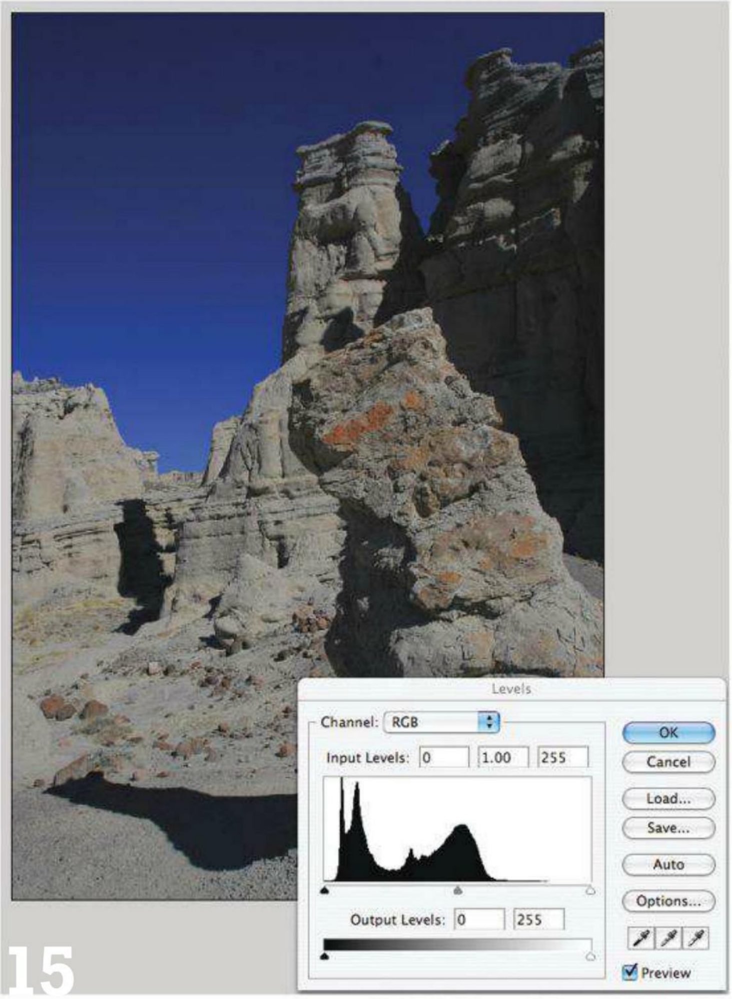
like the Histogram you see in your camera's finder. The pairs show the initial Histogram and the corrected image.

The storefront photo (#13) shows a lot of information shoved onto the right side and cut off at the top, indicating too much bright light, or overexposure. The fix is to drop exposure by minus 1.5EV, and the resultant exposure shows good reproduction of the bright whites (#14).

These formations were underexposed and look flat, lacking their true contrast; note the Histogram shows no or very little highlight information (the right side of the graph, #15). In this case adding exposure of about



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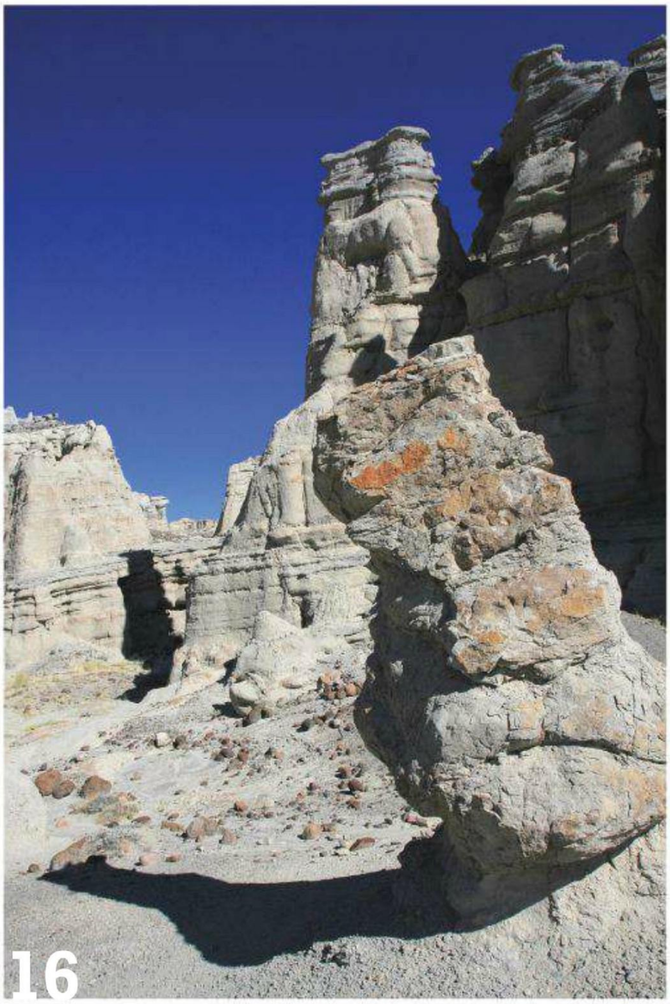

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Tech Tip

Image Effects And Exposure

Though the amount of light needed for a good exposure is constant for any scene, you can balance aperture against shutter speed for various image effects, weighing one against the other in every frame you take.

Aperture is the opening in the lens; shutter speed determines the duration of the light exposure through that opening. Exposure control means working with both of these controls in tandem. In some scenes, that might mean choosing a wider aperture and a faster shutter speed: in others, a slower speed and a narrower aperture. The term "equivalent exposure" means that many combinations of aperture and shutter speed yield the same exposure. The way you balance the two creates different image effects.

Remember:

Aperture=Focus Effects
Shutter Speed=Motion Effects

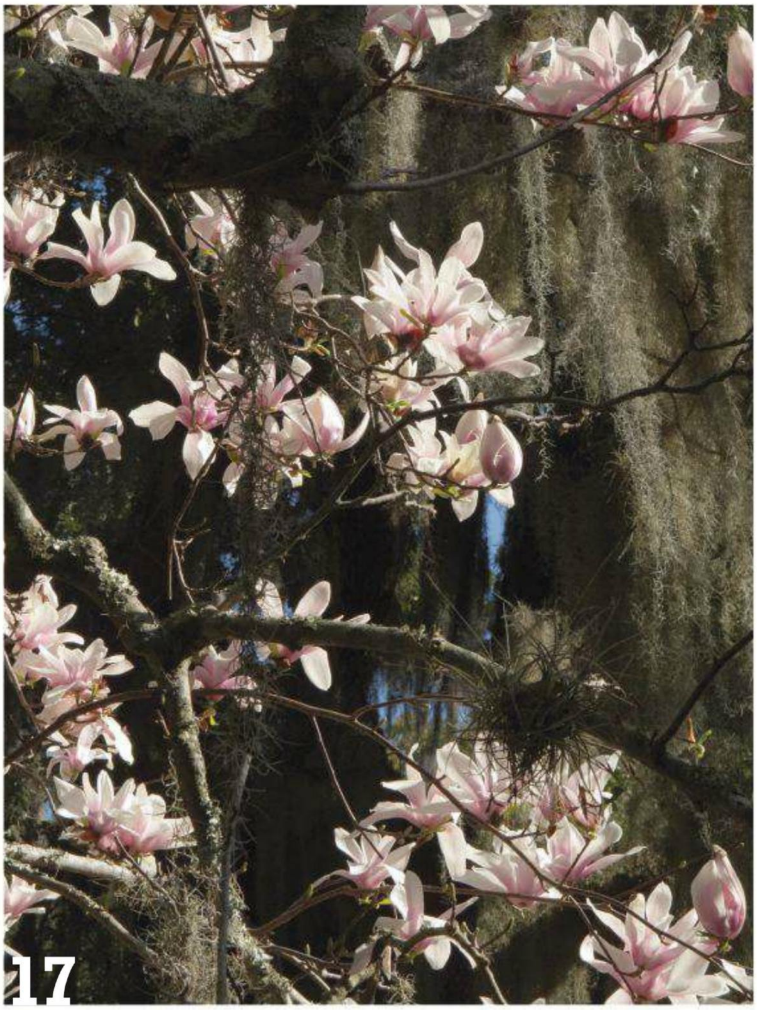
1EV produces a good exposure (#16).

Use the Auto Exposure Lock to maintain selective exposure.

When making readings the exposure readout changes with any movement of the camera and change of scene. There are times when you will want to lock the exposure reading you have made—for Spot and Center-Weighted readings, for controlling highlights and when making specific subject readings and then recomposing to place the subject you just read into a different area of the frame.

Take a look at the photo with bright white blossoms

WorldMags



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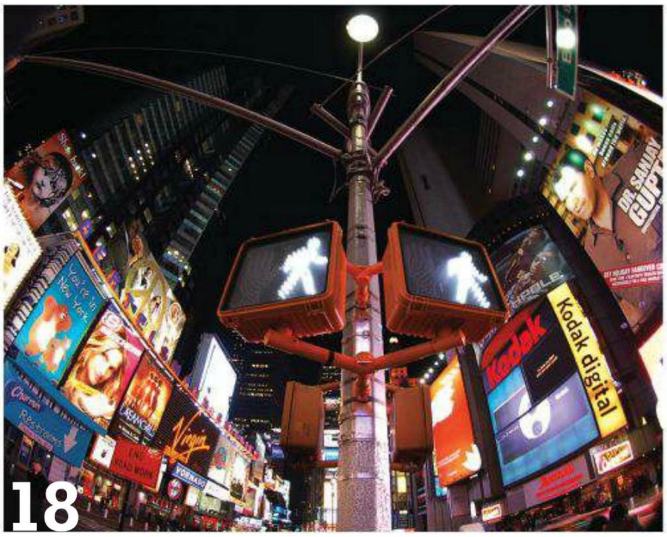

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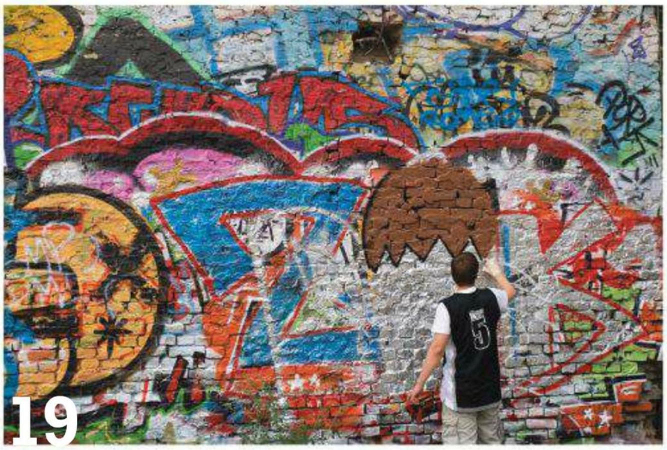

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sitting in front of a dark background (#17). With the wind blowing and the large area of darkness in the background the only way to get a good exposure and keep the bright blossoms from becoming overexposed is to take a (Spot) reading from one of them and lock it for the shot.

The (Center-Weighted) exposure reading in this photo of Times Square (#18) was made from the bright billboards in the background. Exposure was locked and then the composition was changed to include the foreground street sign in the frame. Failure to do this would have resulted in very overexposed billboards and a poor shot.

There are numerous ways to lock exposure, depending on your camera. On some cameras there is a button labeled "AE." When you press this button it holds whatever exposure reading is in the camera at the moment. In most Canon cameras this function is indicated by an (*) on the camera back, which you press to lock exposure. If your camera lacks a specific locking function slight pressure on the shutter release button usually does the trick.

Take advantage of low contrast.

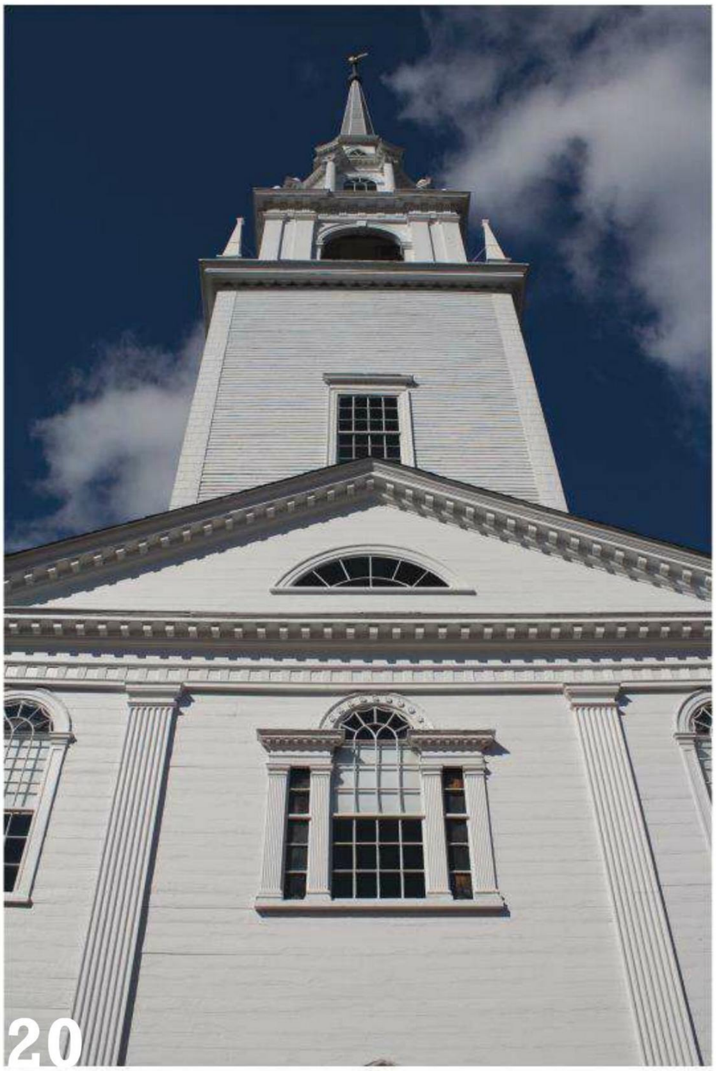
Flat, or low contrast light creates little or no brightness differences throughout the scene. It is the light of overcast days, under a forest canopy or when the scene is entirely shaded by a high wall.

For digital, flat light is no problem. In fact, it is perhaps the easiest light in which to make photographs. You can shoot in any Auto Exposure mode and use the Evaluative metering pattern for good results.

This photo (#19) was made in the shade of a building. It is crisp, bright and not "dull." The reason is that there was no high contrast to fight, which might have affected the bright white areas in the scene or made the colors too dark. In short, all the exposure information was captured. The color and contrast were easily enhanced by increasing the Color Saturation (Vivid Picture style) and the Contrast settings in the camera.

Use Exposure Compensation for bright white.

An important tool when working in Program, AV and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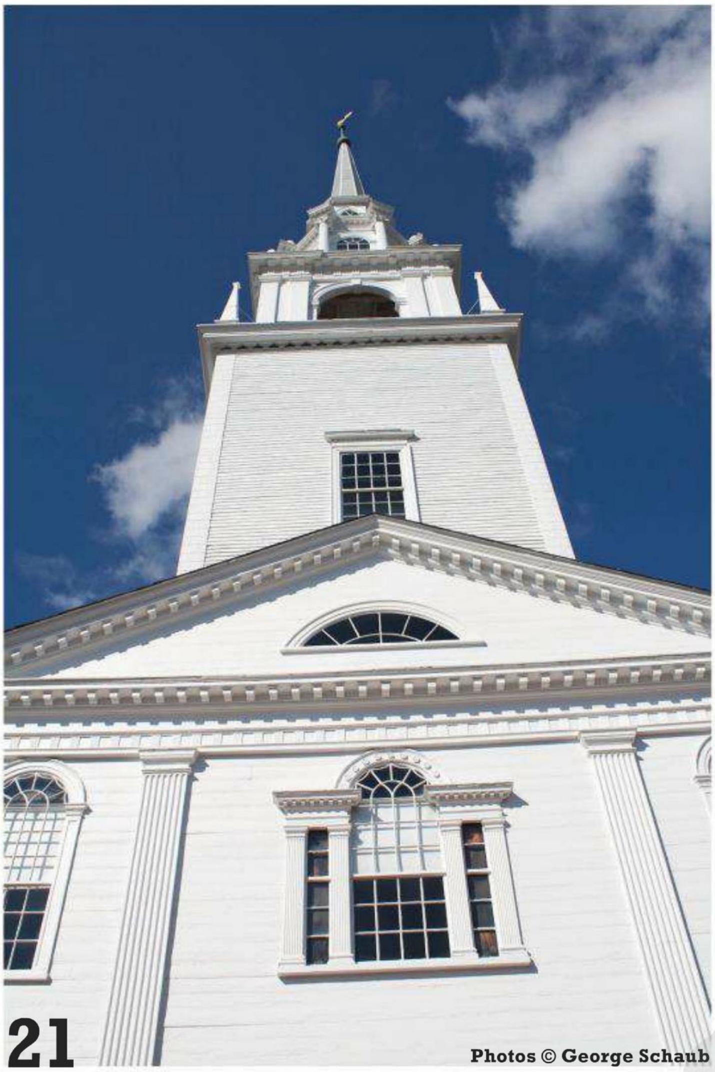
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TV Exposure modes is exposure compensation, accessed via a +/- button or menu item. It is an extremely helpful function when there is bright white in an image, a condition that is most likely to "fool" the meter into recording the white as a dull gray and making all the other areas of the scene too dark.

This often occurs in scenes where there are very, very bright areas, such as snow at high altitudes on a sunny day, or with bright white clapboard buildings, such as this New England church front.

Odd as it might seem, you add exposure to this type of scene by dialing in a +1 or +1.5 exposure compensation. This set shows the image "as read" by the meter (the dull white, #20) and the compensated exposure (#21).

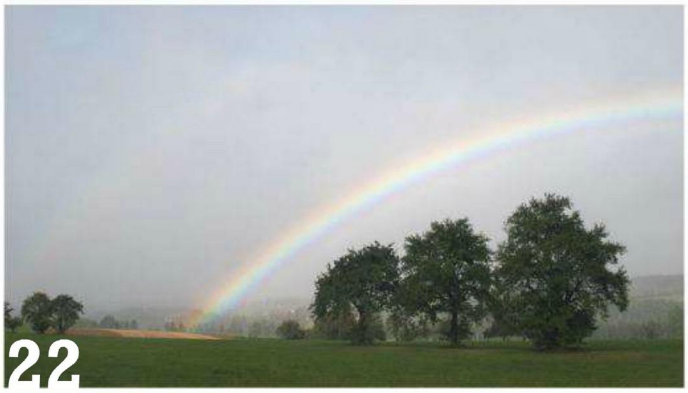
When to use Auto Bracketing.

Bracketing is making a set of exposures that add and subtract exposure from the camera's recommended readings. It is often used as a way to obtain images for use in HDR processing, where 3 or more shots are combined to make 1 exposure, but it is also a great fail-safe way to get the right exposure, or very close to it, when the light is tough to read or you simply do not have the time to make complicated exposure calculations.

Auto Bracketing is a way of setting the camera so that 3 (and sometimes more) exposures are made in a bracketed sequence with a press of the shutter release button. Lacking that feature, you can also bracket manually, 1 exposure at a time.

Auto Bracketing was used with this shot of a fleeting rainbow. It was raining so Auto Bracket was set inside the car, and then there was only time for 2 bracket sets before this phenomenal scene faded away. Having to shoot this manually might have meant a lost opportunity.

You can set the exposure bracket for as much as 1 stop, EV, or more or less. An exposure bracket is generally 3 shots in sequence—1 "normal" or recommended, 1



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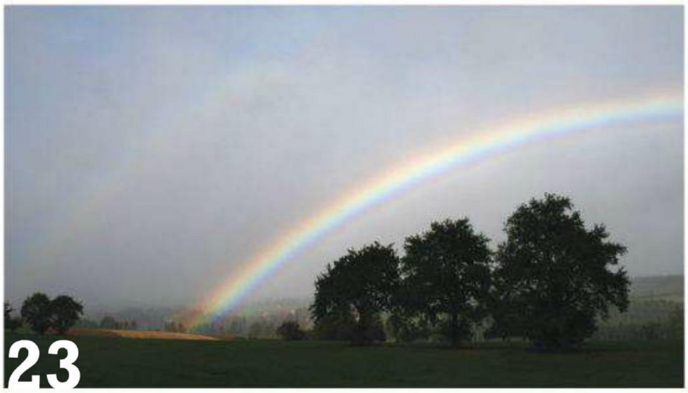

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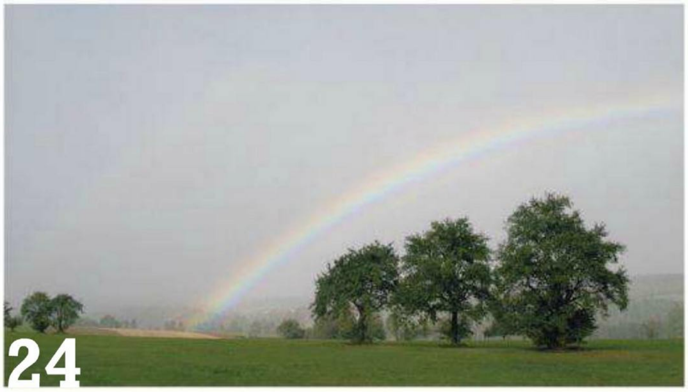

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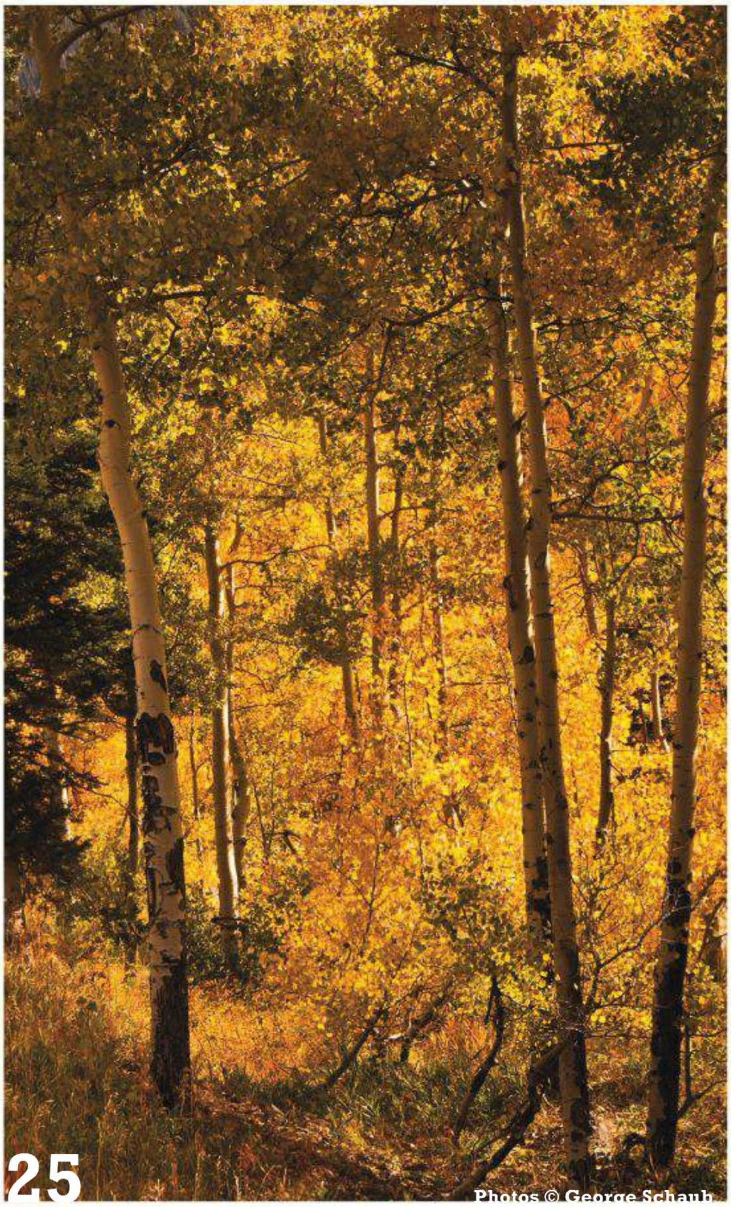

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with less and 1 with more light, as seen here (#22, #23 and #24). Keep in mind that if you are using AV mode the brackets will be made in shutter speed settings (for example: f/8 at 1/125 sec, 1/60 sec and 1/250 sec) and the opposite in TV mode (for example: f/8 at 1/125 sec, f/5.6 at 1/125 sec and f/11 at 1/125 sec).

Meter off the backlight for brilliant color.

When you encounter a backlit scene the easiest way to get great color is to meter off the bright light, lock the exposure and then re-compose as you will. In this fall scene Center-Weighted metering was used to make a reading of the glowing leaves and resulted in a perfect exposure for this subject matter (#25).

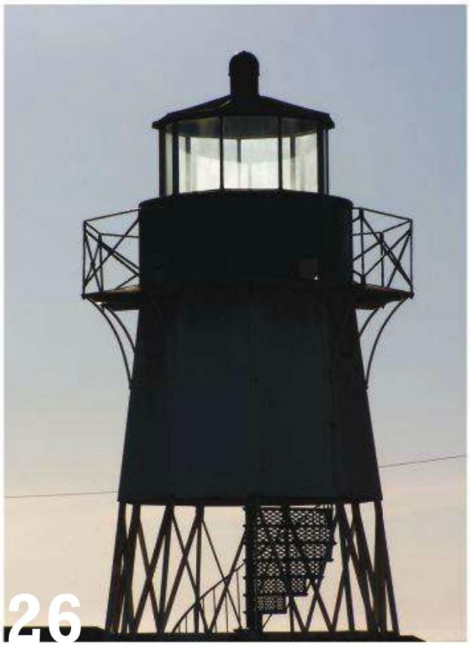
Use back lighting to create silhouettes.

Back lighting is inherently contrasty, meaning that there will be a considerable difference in exposure between the foreground and the light behind it. In some instances this means that some or the entire foreground will either be in silhouette (having form but no detail within the form) or be considerably underexposed. Exploit this high contrast by exposing for the light using Spot metering and do not include the shadow areas in your exposure calculations. As the sun set behind this lighthouse (#26) it created a stark form and nuanced background colors, yet the light through the beacon housing remained silvery rich.

Use the built-in fill flash for backlit main subjects.

The small flash found on your camera is not intended for illuminating great distances or providing lots of light in a dark room. It is best used fairly close-up or to add just a "kicker" of light to a scene. It can also be used to bring a subject that might otherwise be backlit out from the shadows, such as this non-flash and flash example of Emma Polgrean getting ready to sled down a hill on a snowy day (#27 and #28). Note how the flash "freezes" the snowflakes as they fall.

These flowers (#29) were photographed with a Lensbaby (www.lensbaby.com) at the minimum focusing



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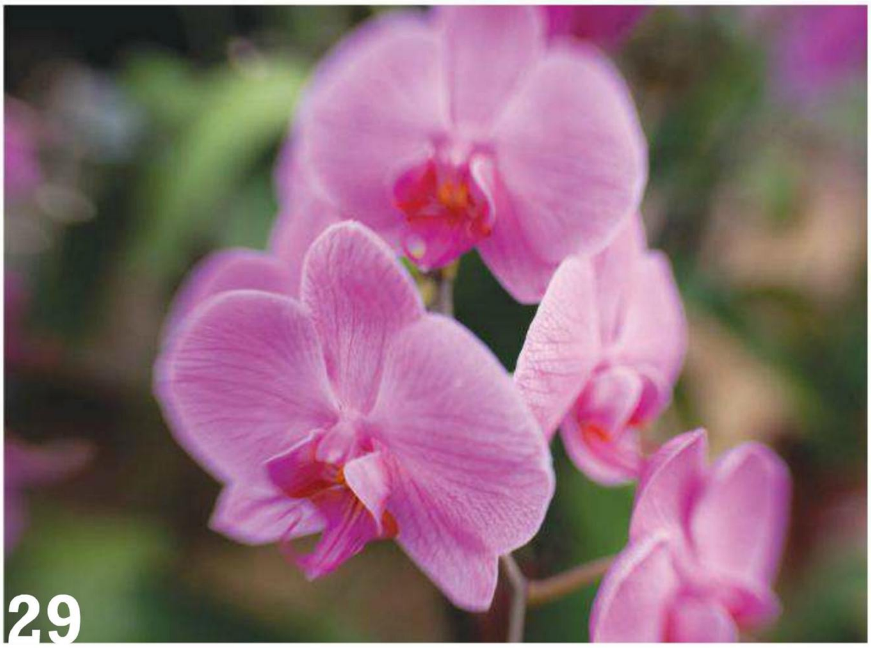

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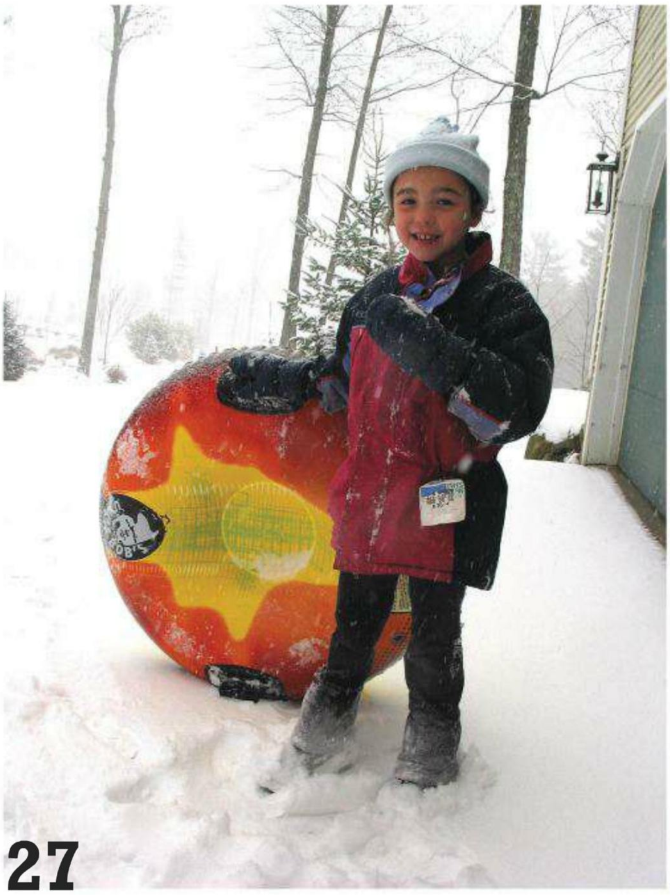

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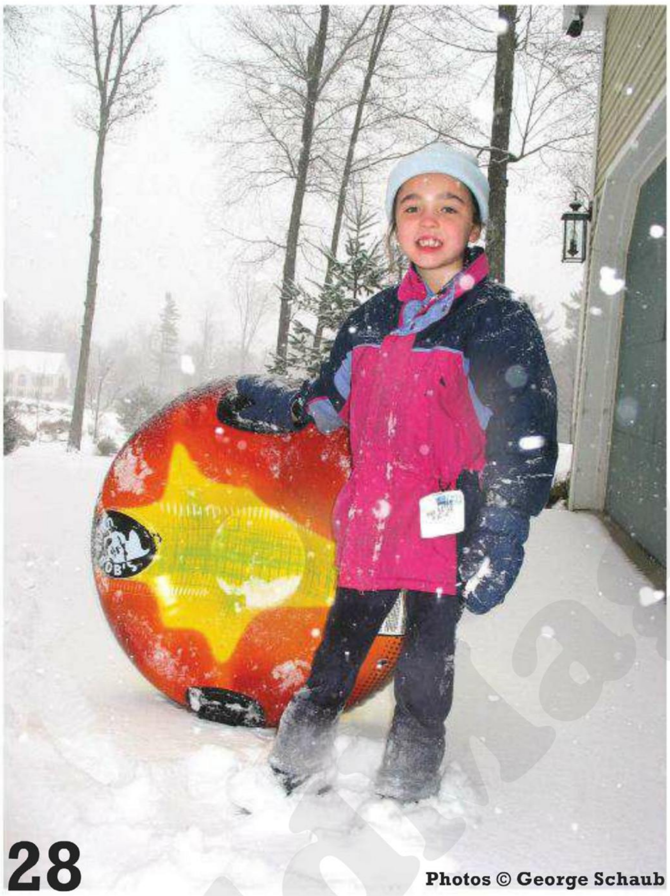

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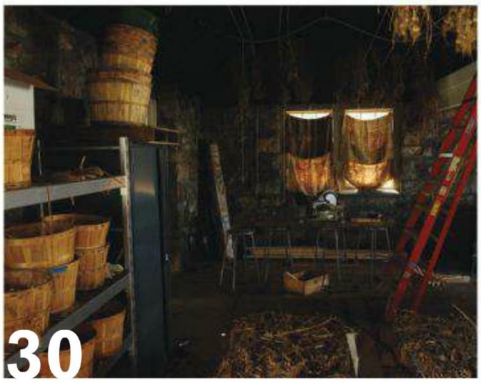
distance and the on-camera flash. The bokeh is enhanced by the way the flash/focus combination creates rim highlights, a kind of "halo" of soft focus around the flowers.

Tame high contrast in-camera.

Given that high contrast can cause exposure problems, there are some in-camera controls that can be used to modify its ill effects. New processing algorithms that go under the general heading of "Tone Compensation Control" deal with contrast with an automatic shadow/highlight balancing act. Called D-Lighting in Nikon cameras, iContrast in Canon and similar terms in other models, the processing set-up controls highlights and "opens" shadows.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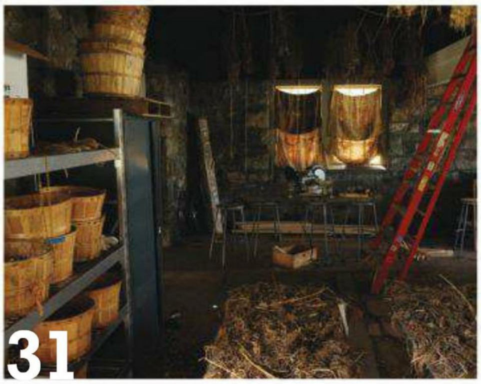
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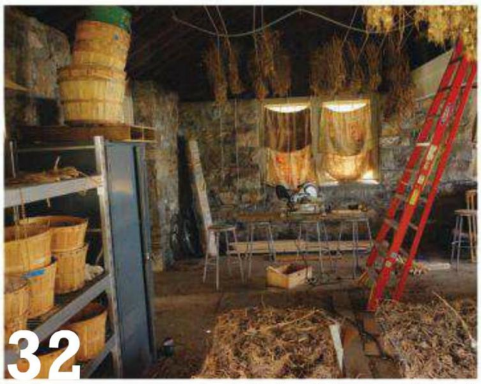
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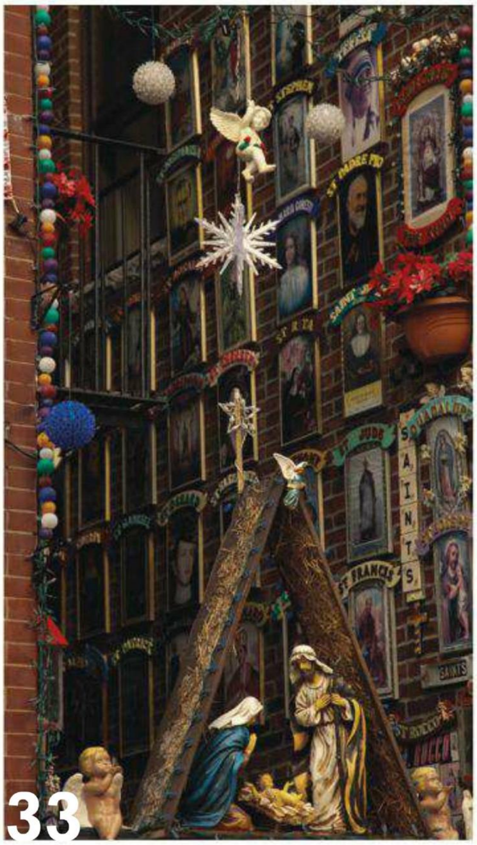
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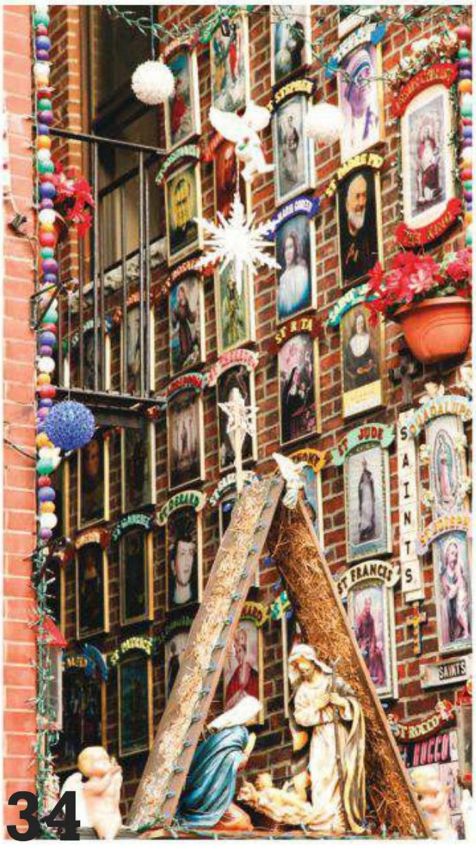
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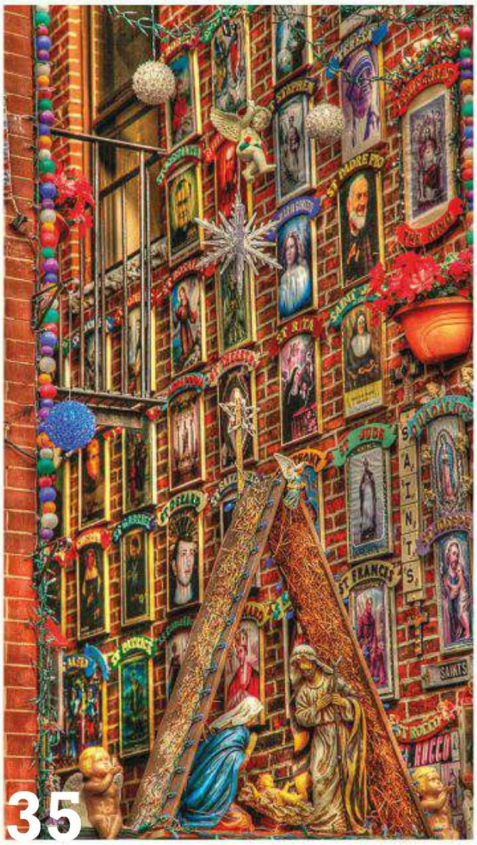
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You can set these controls to low, medium or high, depending on your perception of how high in contrast the scene might be, or leave it at Auto to allow the camera's processor to make the call. In this set of images the contrast control (here in a Sony D-SLR) is off, set to +1 and +2. Note how the shadow areas open up (become brighter with more detail) as the Tone Compensation is set higher (#30, #31 and #32).

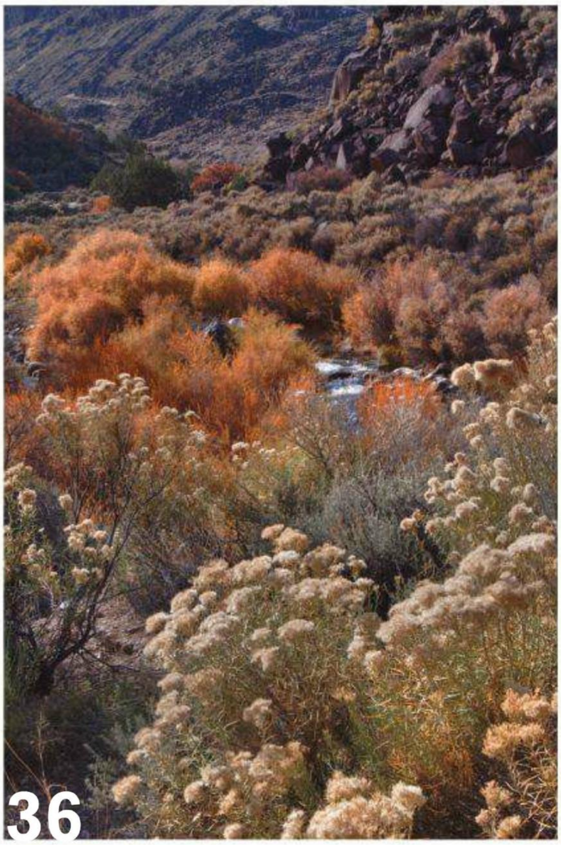
Shooting for HDR imaging.

While some photographers do not like HDR when it's taken "too far" there are times when it can come in handy. The sensor in the camera has a certain range of brightness levels (contrast) that it can record. When the contrast gets too high it can cause a loss of detail in the shadow and/or highlight (brighter) areas. You can overcome this by making multiple exposures of the same scene using different exposures, then using software to combine those exposures to extract details in the highlights and the shadows and put them together in 1 frame. Some cameras now have HDR functionality built-in.

In order to ready images for this technique you need to bracket exposures and make a number of different exposures of the same framing. (See Auto Bracketing), so working on a tripod is recommended.

Shown here are 2 shots from a bracketed series and the final (#33, #34 and #35) highly dramatic HDR rendition that looks more illustrative than photographic. You can also make "straight" HDRs that make a photo made under poor lighting conditions look like it was made under ideal conditions.

In the landscape shot there's a more natural conclusion to the work, one that brings in the most detail from the light, dark and camera-recommended exposure of this high contrast scene. Which is best? That's what the



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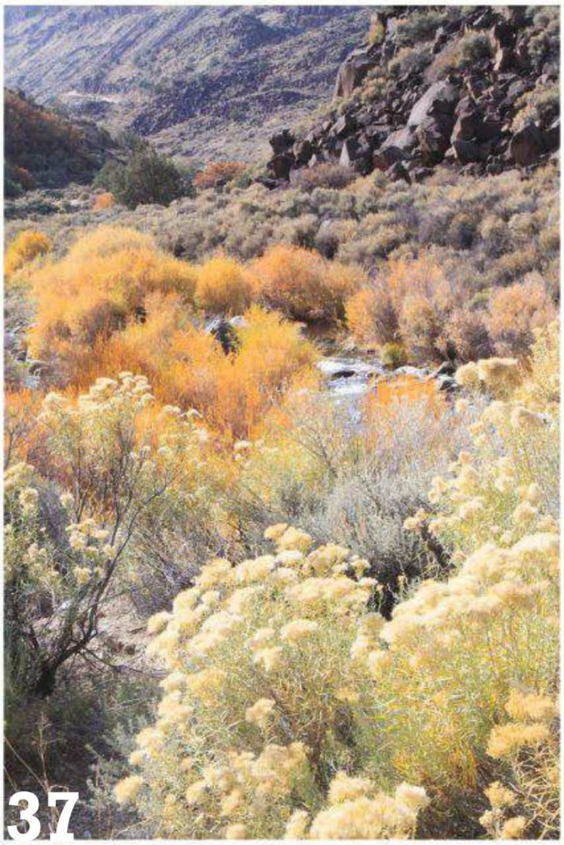

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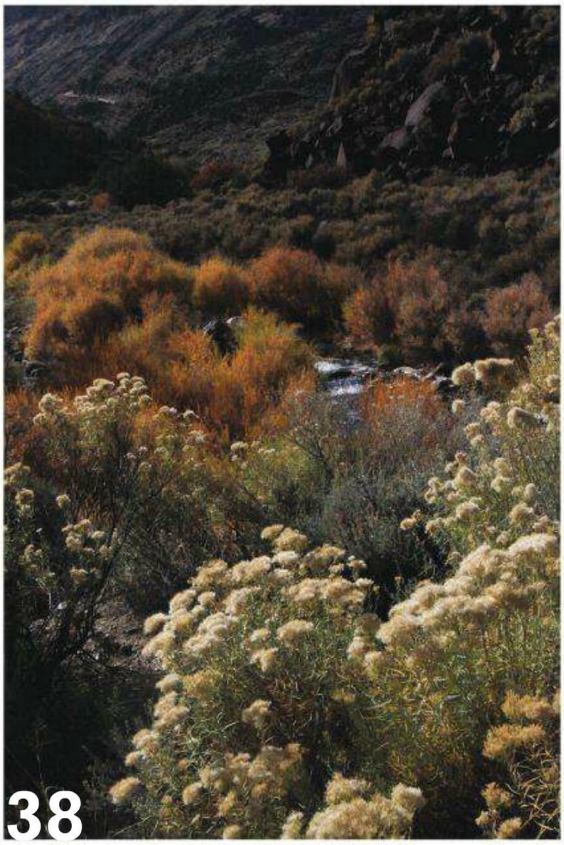

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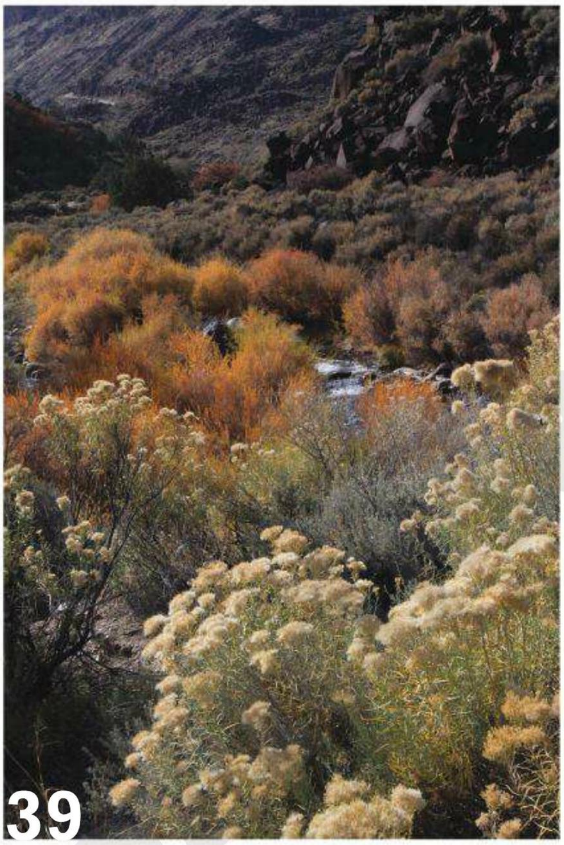

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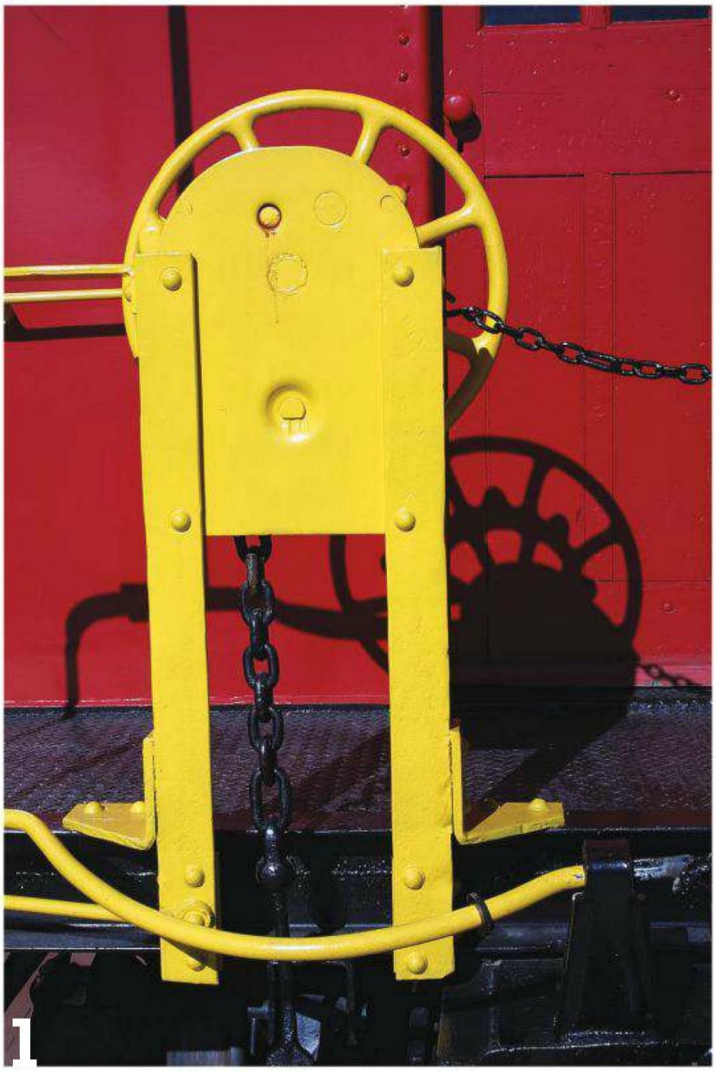
debate is all about. Whether images look best showing the deep shadows that a high contrast scene when photographed would have always shown in the past, or one that uses digital technology to reveal all the information that can be gathered from the bracketed shots (#36, #37, #38 and #39). ■

Color Controls, Drive Modes, Panoramas & More

In-Camera Creative Options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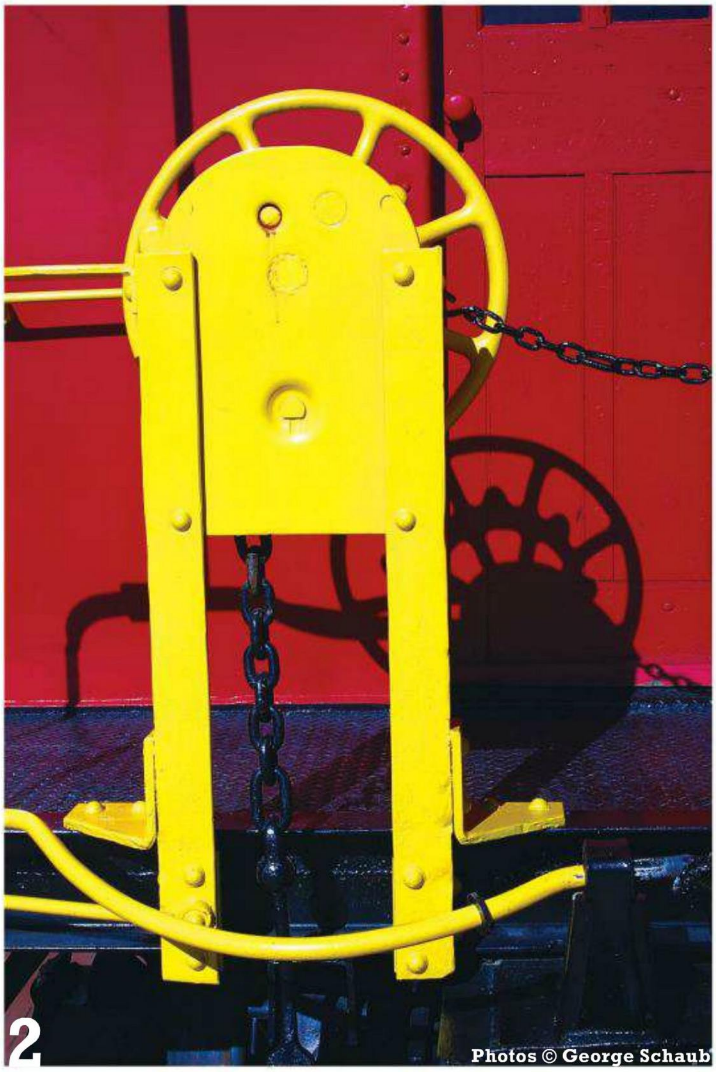
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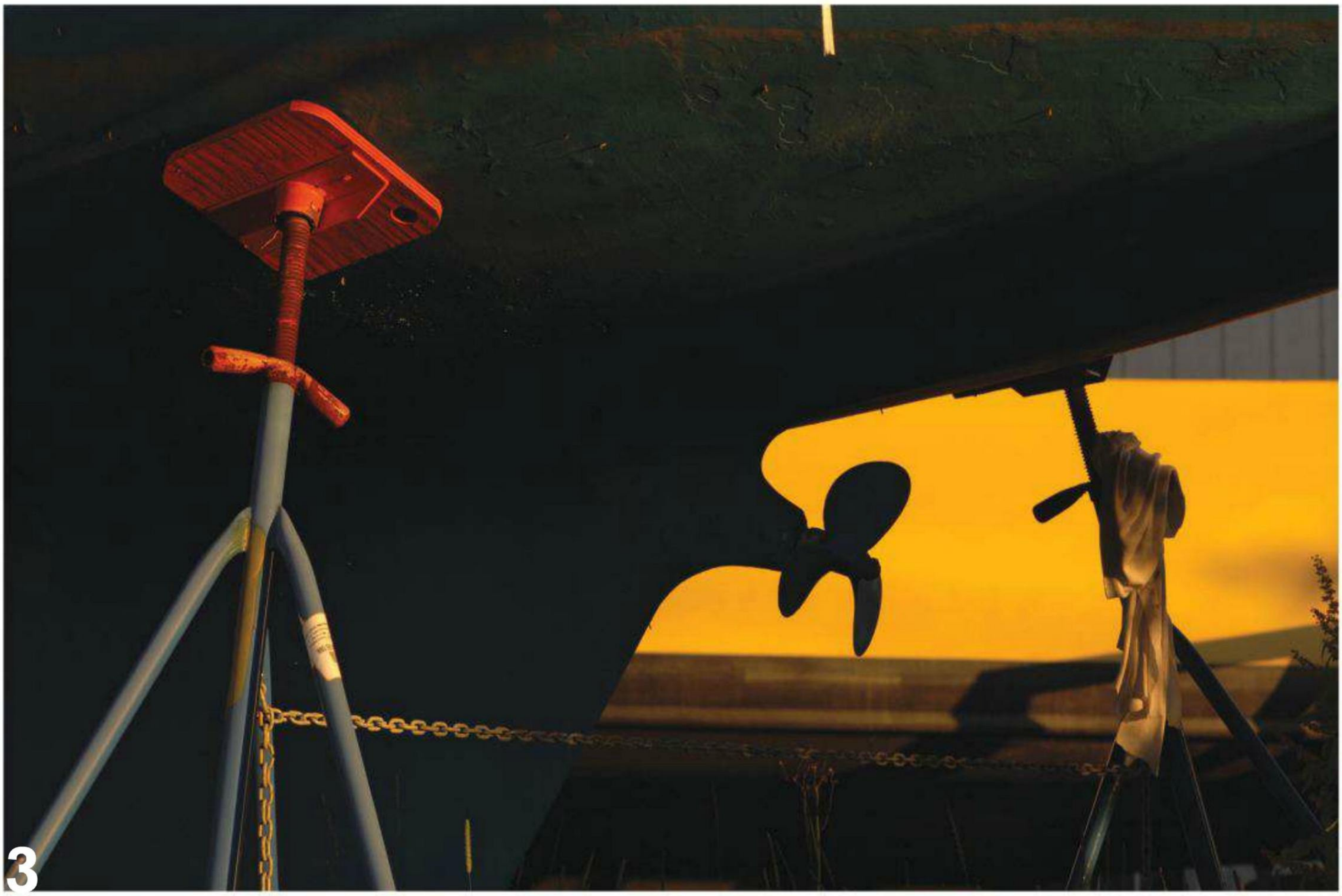
In this chapter we'll be exploring various in-camera creative options. Today's cameras contain microprocessors that are like having a custom photo lab and graphic art studio built-in. In the color realm they allow you to choose color saturation (vividness), neutralize or enhance color casts (white balance) and even create custom color renditions to match every subject and scene. Drive modes allow you to capture fast action "in a hurry" and pick out the best frame, aiding you in getting the best sports shots you ever made. And finally we'll explore some art filters and special effects, including panoramas that are now easier to make than ever before. Our aim is to give you a sampler that will hopefully encourage you to explore the amazing capabilities your digital camera affords even more.

Use in-camera controls to increase color saturation. Digital images are composed of bits of code that can be altered in many ways. Color saturation, the degree of color vividness, is one of the options you have in every camera and it can have a profound effect on the look of a scene. There are numerous ways to affect color saturation: you can use the Color Saturation menu in the Picture Style options, choose a Scene mode that enhances color or raise the saturation in the Parameters settings and save it to a "my settings" bank to call on any time you wish.

Note that color saturation affects the vividness of all the colors in your image, though you might find that colors such as red, yellow and orange tend to be more



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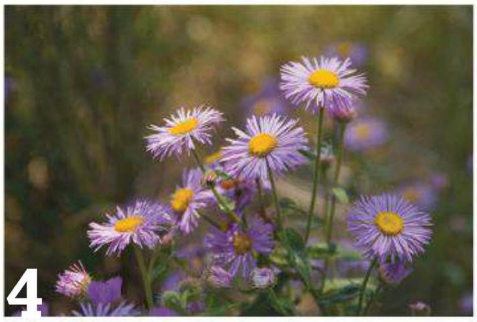

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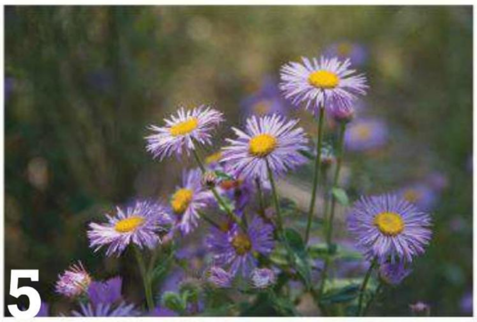

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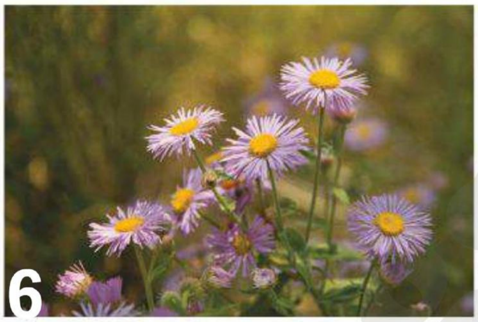

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sensitive to this control than the blues and greens. Saturation can get a bit wild, as seen in this detail from a train caboose photographed in "Normal" (#1) and "High Saturation" (#2) mode. Each subject, scene and lighting condition will inspire you to work with varying degrees of saturation.

Use Spot metering to saturate bright colors.

As we saw in a previous chapter, the Spot meter has many uses, but one that is not always mentioned is how it can be used as a way to saturate bright colors. Aim it at a color you wish to become richer and the exposure system will move its brightness value to the center of the recording range. If that color is bright it will become darker, and a darkened bright color will become even more vivid. This often results in underexposure of other parts of the image, as seen here in this boatyard scene (#3) where the spot meter was placed over the bright yellow hull, the exposure locked and then the image was recomposed to yield this photo.

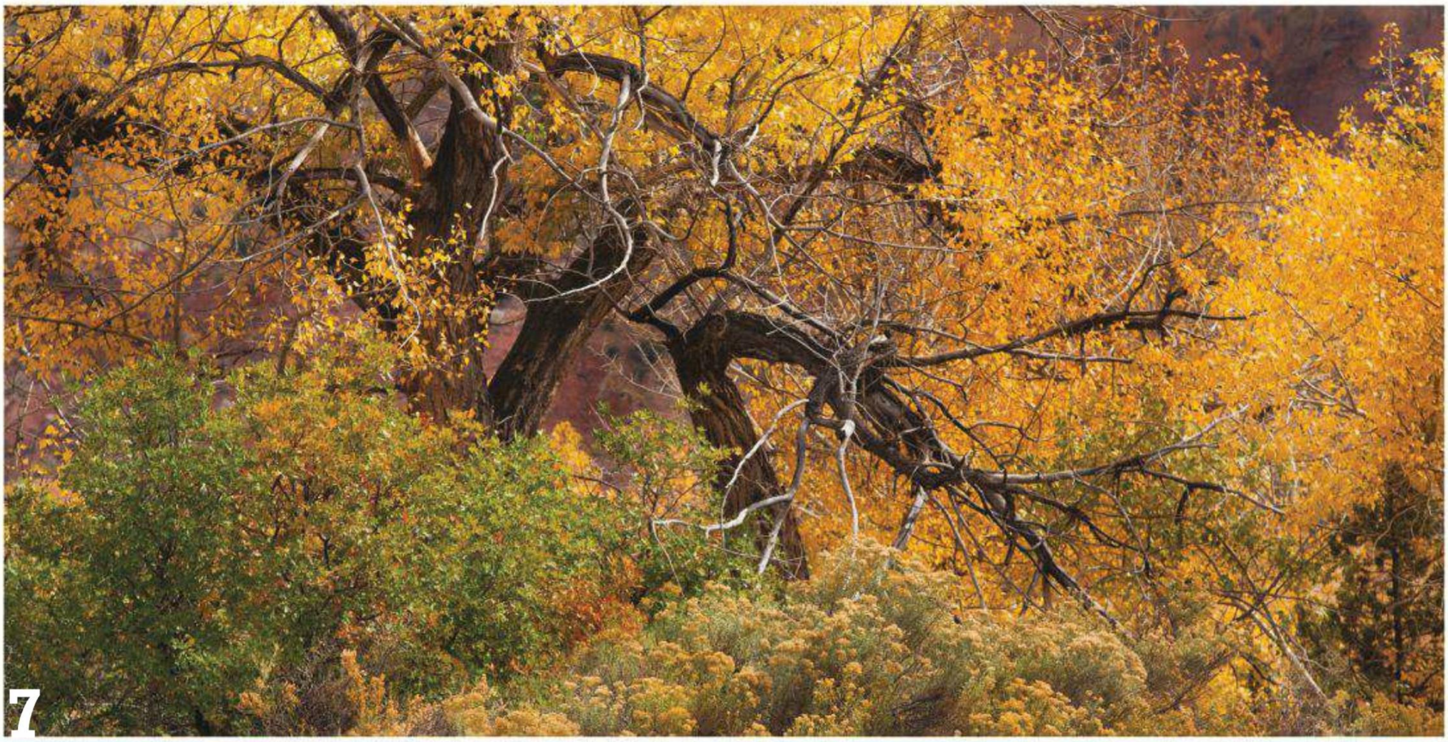
Use White Balance bracketing.

If you want to experiment with WB settings to see how variations look and affect the subject and scene, try using White Balancing bracketing. Some cameras allow you to make 1 picture at the set or Auto White Balance, 1 "warmer" and 1 "cooler" rendition with a press of the shutter release. You can set the degree of bracket in small or large increments.

Here's a Daylight WB setting that was bracketed to create 3 shots (#4, #5 and #6)—a "neutral" or set WB, 1 cooler (bluer) and 1 warmer (yellower) rendition. Of course you can do this by changing the setting for each individual shot as well, but WB bracketing makes it easier.

Use White Balance for enhanced color moods.

White Balance settings can be used as a way to "correct" color, but it is also very useful for adding a touch of color richness or mood to a scene. To enrich "warm" colors (yellow, red, orange) you can set the White



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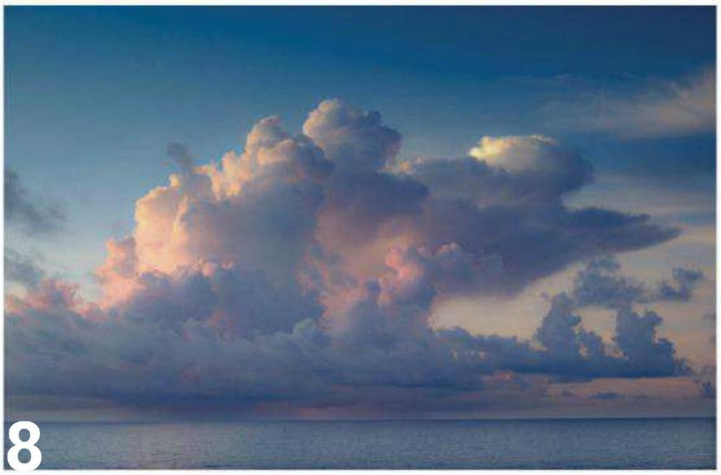

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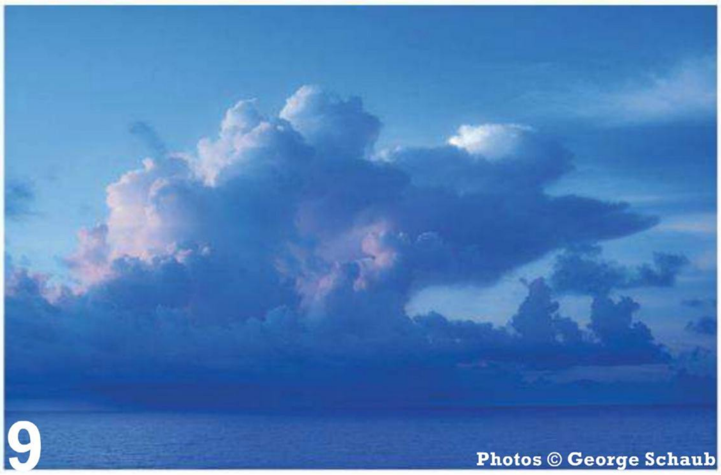

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Balance to Cloudy, such as in this late fall shot made in a New Mexico valley (#7). Or you can alter the WB setting to add an entirely different mood to a scene. In this dawn cloudscape WB was set to Daylight for a good and true color rendition (#8); WB was then switched to Tungsten to add a moody blue cast to the scene (#9). Both are possible skies—it's up to you to create the mood and feeling of each scene.

When to use the Auto or Daylight White Balance setting.

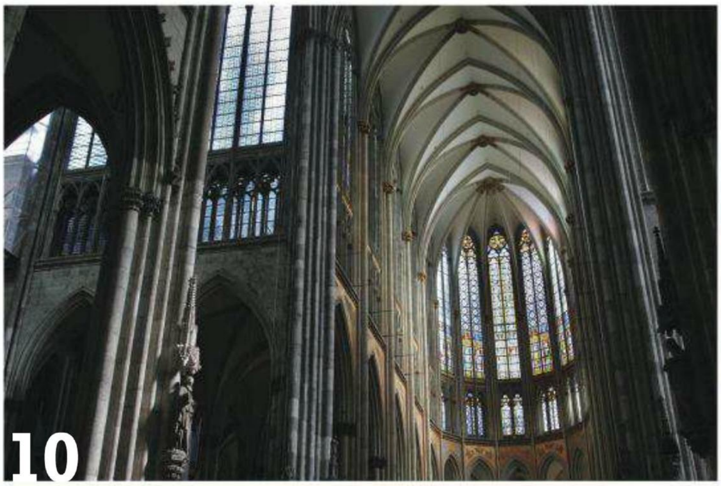
When you want to retain the color cast you see, set the White Balance to Daylight. This serves as a sort of fulcrum that will record a warm glow as warm and shade colors as cool, or "bluish", without attempting to correct

Tech Tip

What is White Balance?

White balance (WB) is a way to render "natural" color when the color in the scene is highly influenced by the light source. You can see how light affects color by making non-flash shots indoors lit by tungsten light (which might put an amber cast over the scene); shooting in open shade (which might cause a blue cast); or making photos in arenas and concert halls with stage lighting (where the cast of the light turns out quite different than what you observed). This color influence is not what we see because our eyes adapt to the cast of light, unless of course it is overwhelming.

White Balance settings do not alter the color of the subjects themselves, but rather the influence of the prevailing light source. When counterbalancing this influence (for example, when removing the blue cast from subjects photographed in the shade) WB is a "corrective" measure, but you can also use it as a creative tool to add color emotion or mood to a scene.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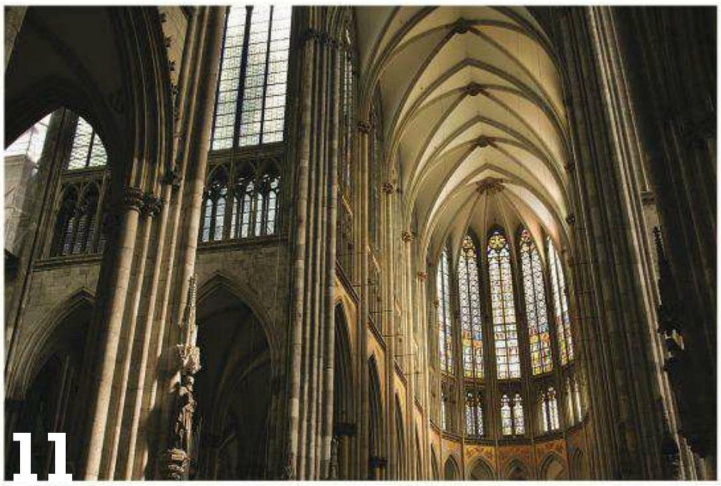
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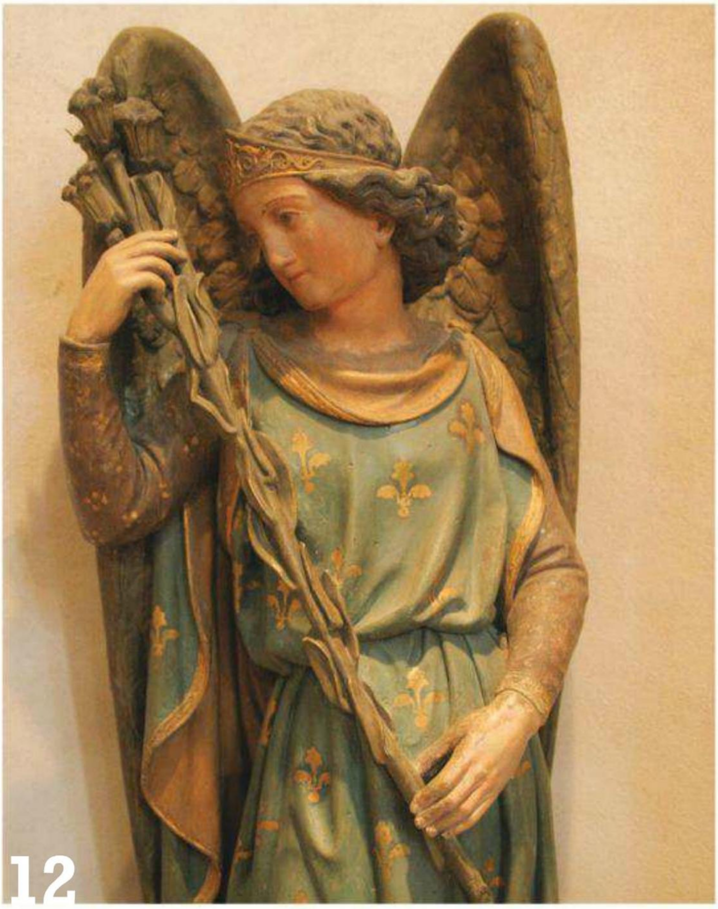
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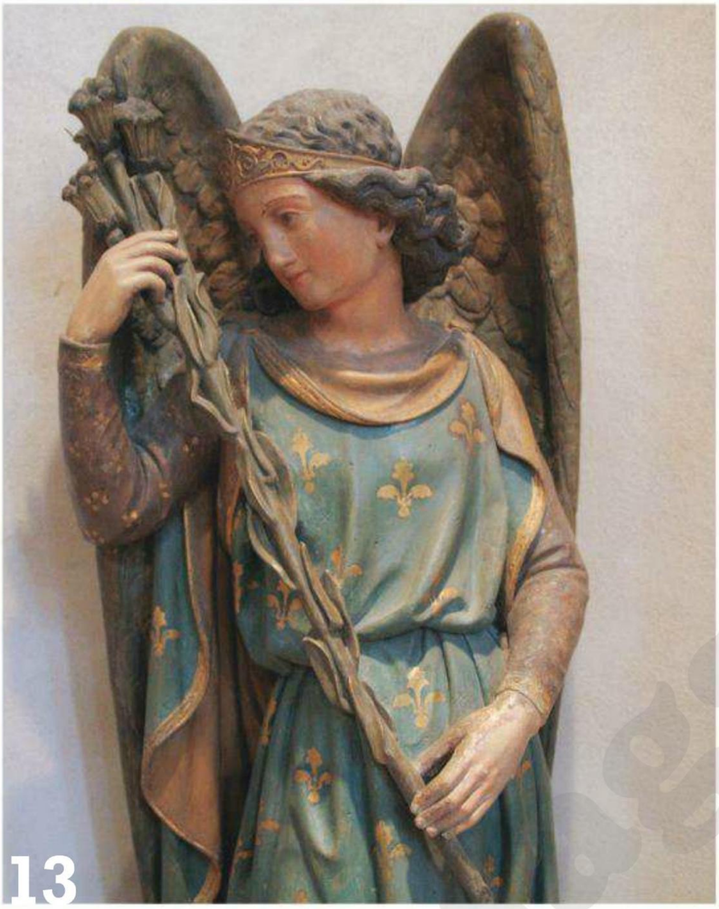
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or balance the light. Setting the White Balance to Auto is best reserved for mixed light (a mix of different sources, such as tungsten and daylight) and when working indoors under artificial illumination. But Auto can be too "clinical" for the mood. In this set of photos made inside the Cologne Cathedral (#10 and #11) the Auto WB tends to neutralize the color of the light, which was in fact more like the warmth shown in the Daylight WB setting shot.

Customize the White Balance to the scene.

There is an easy way to match the White Balance to the light at hand for correct color rendition. Set the WB to Custom. Place a sheet of opaque, bright white paper under the illumination. Fill the viewfinder frame with the paper and press the shutter release—there's no need to focus. This takes a color reading of the white and "neutralizes" the colorcast. Then, whenever you set the White Balance on Custom it will hold that reading for you.

This comes in handy when working in a studio or in a place where you will be shooting for a while and don't want to worry about White Balancing every time you make a shot.

These statues are in the vestibule of a church in Germany, all of them are illuminated with tungsten light. But incandescent light sources are not always "true" to the Tungsten WB setting due to the age of the bulb or the type of bulb used. Taken with Auto White Balance, the statue looks okay (#12). But when a Custom WB setting is made you can see how much nuance was lost in the Tungsten setting (#13). Setting Custom meant that all the other shots made under that illumination came out

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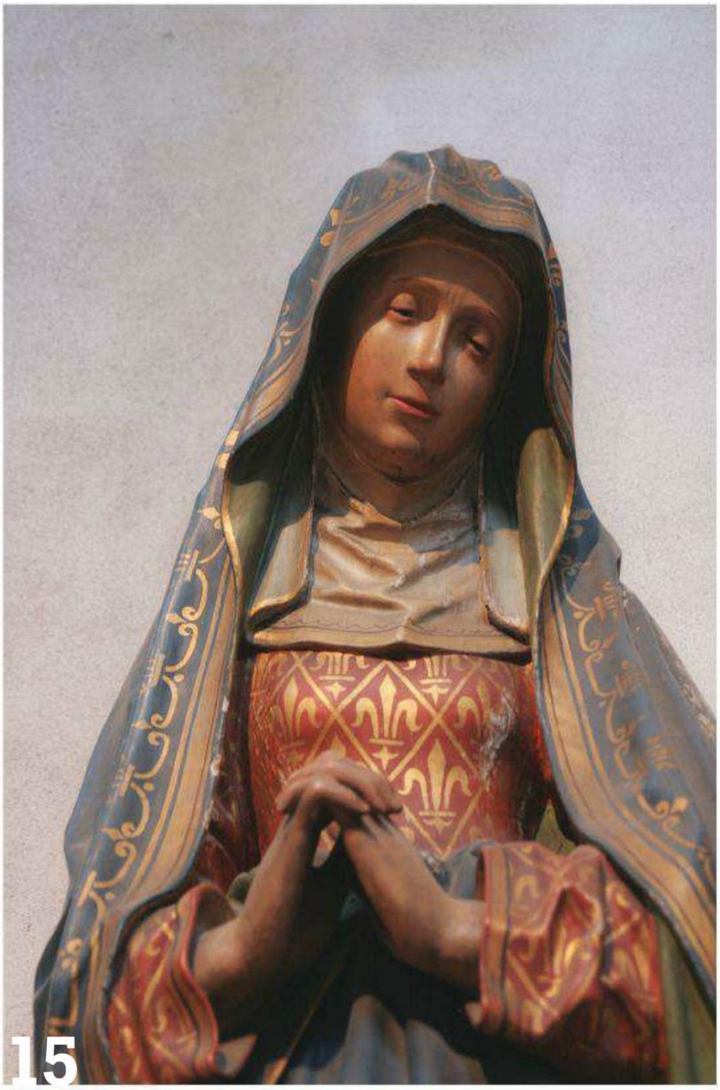

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right as well (#14 and #15).

How to use the Drive modes.

There are generally 3, and sometimes 4 options in the "Drive" mode function in your camera, and each has a specific benefit. Single is probably the Drive mode you would most commonly use. Set this and every time you press the shutter release you'll get 1 shot.

There are 1 (or 2) Continuous Advance modes, which means that the shutter will fire at a number of frames per second (fps) for as long as you keep pressure on the shutter release. The frames per second rate depends on the camera, with most cameras offering 2-4 fps and pro cameras delivering up to 8 fps, and faster. Some mirrorless cameras will go as high as 10 fps. There is a "low" and a "high" framing rate on many cameras, with high being the max you can get, albeit with a smaller file size.

You set continuous high to be sure to capture the action in fast moving events, such as this 8-shot sequence of a goal score and celebration that took about 2 seconds to unfold (#16 to #23). (If you look closely you can see the puck hit the back of the net about halfway through the set.)

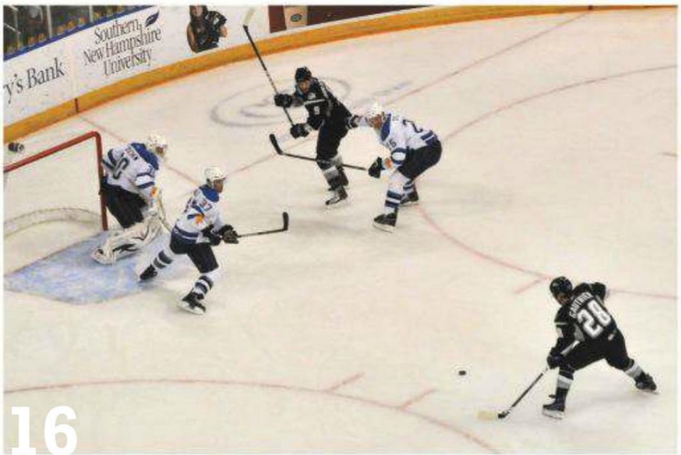
Using add-on filters and digital filter effects.

"Traditional" filters screw onto the front of the lens to alter the character of the light passing through. Filters create just about any optical effect, from those that warm up the light (a slight yellow cast) to starburst filters that cause highlights to diffract into 8 pointed "stars." Digital photography and image manipulation

Tech Tip

Using the Self-Timer mode.

Self-Timer mode delays shutter release for a set period of time after you press the release. This can be as long as 10 seconds, a setting that can allow you, the photographer, to get into the frame when the camera is set on a tripod. There's also a shorter 2-second self-timer, which is a great way for D-SLR users to cut down on the potential vibration caused by pressing down the shutter release. This comes in handy when using long-range telephoto lenses or when making close-up shots handheld.



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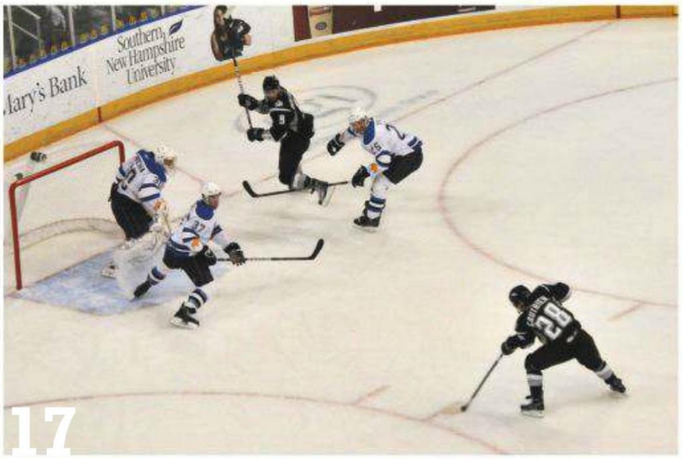

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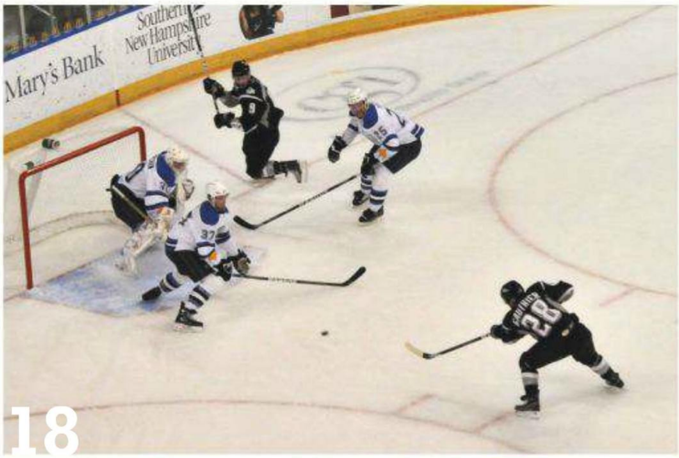

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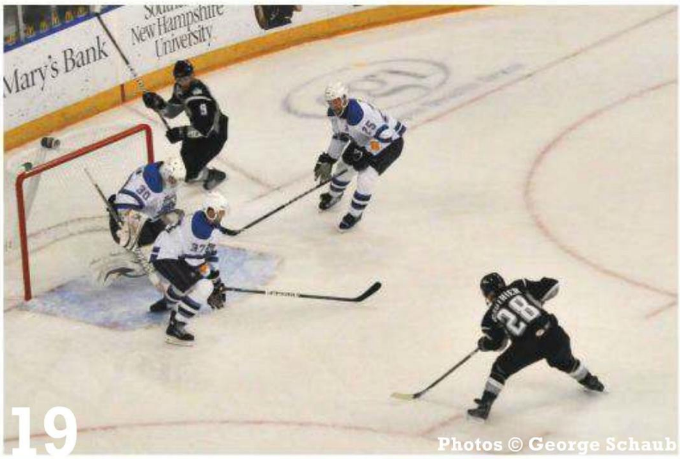

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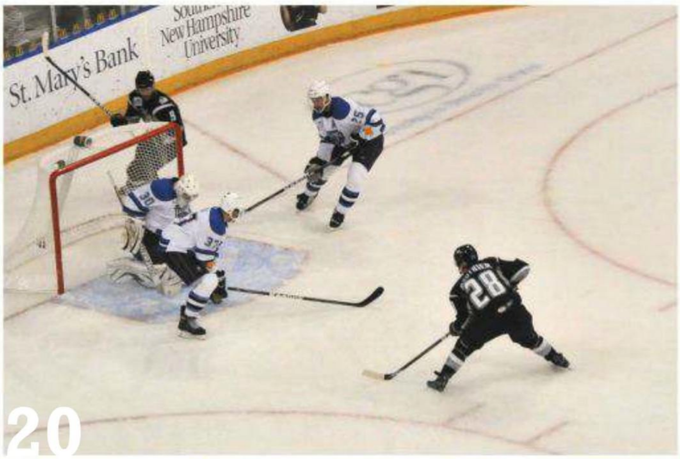

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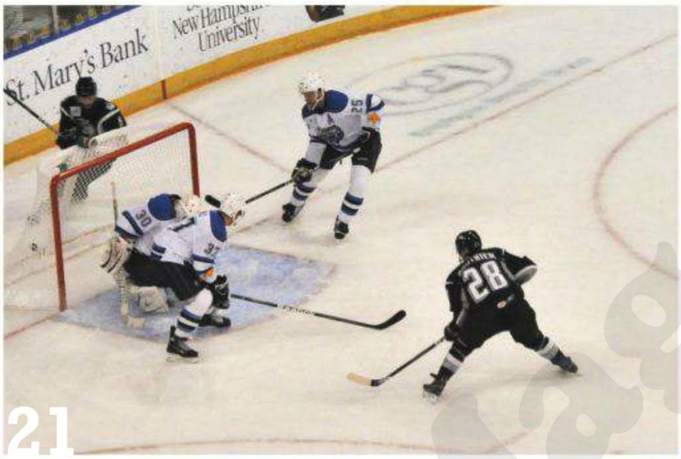

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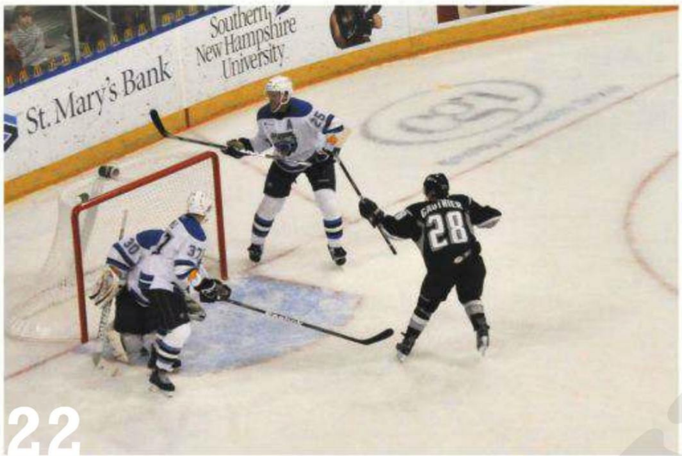

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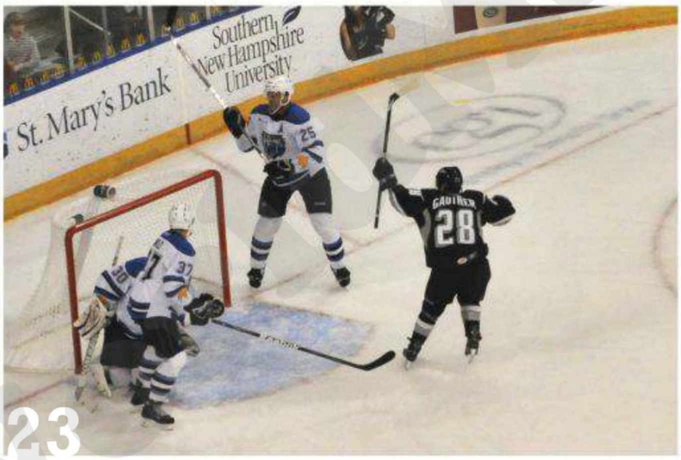

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software has, for the most part, eliminated the need to use such filters. Virtually any effect attained with these filters can be emulated in the camera or later in processing.

One "external" filter that digital photographers who enjoy shooting landscapes still use is a Graduated Neutral Density filter, sometimes called a "Grad." The filter starts out with a neutral (color free) gray mask that gradually fades to clear about mid-filter. This is very useful for photographing landscapes where you include the sky, such as in this photo where a Grad helped deepen a bright sky to add drama to the scene (#24).

Using in-camera Art filters.

"Filters" in the camera's menu or the camera's Scene modes are pre-programmed processing instructions that are applied to the image after exposure. Some of these

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effects can be as simple as adding a "warm" cast to the image, while others can be used to add a soft focus blur, to create a "fisheye" effect, to make an image look like it was made with a "toy" camera and more.

Camera makers have been adding more and more of these special effects that require no more effort on your part than setting them prior to making a shot (and some even allow you to add the filter effect on images shot without them right in the camera as well). Check your camera's instruction book and explore your camera's menu for these varied filter effects.

This Herald Square street scene was made using a "sketch" filter (#25). This iris was photographed with a high contrast/saturation filter (#26). And this stand of autumn trees was shot with an in-camera fisheye lens effect (#27).

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Making a Panorama.

Panorama imaging allows you to take a photo encompassing more of a scene than any lens could possibly match with 1 shot. This is often done by making a series of overlapping images and then using software to "stitch" them together, but more and more cameras offer in-camera panoramic power.

Here's one way it works: Choose Panorama mode and a screen will come up that seems to crop the image into a long rectangular form. The screen also shows a guide to making an image, often showing where you should overlap the frames. You then follow the image trail from left to right or right to left (and even top to bottom) and then press a Set button when you are done to have the processor create the panorama for you.

Other cameras work with a "Motion" stitch, sometimes called "Panorama Sweep" where you sweep the camera along a horizontal (or vertical) arc and the processor stitches the scene automatically. This is an example of a "Sweep" Panorama made with a Sony camera in the Grand Tetons (#28).

Enjoy working in Black and White.

Even though all digital images are "color" images (in that they are composed of color information) they can also be used to make great black and white images. There are numerous specialized processing programs for creating black and white images from digital files, but you can easily create them in-camera as well.

Use the camera's menu controls and choose Monochrome mode. (Note: If you are shooting in JPEG format you are committed to black and white; if you shoot using Raw format you can bring the photo back to

Photos © George Schaub

full color later in Raw processing.) If you are working with a camera with "Live View' you can see the monochrome effect right in the LCD finder; if not, you can quickly see the results in image review.

Tech Tip

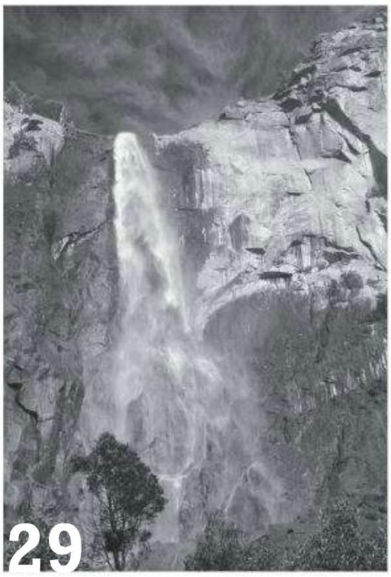
Megapixels and the print size.

There's an easy way to figure out what the print size/print quality ratio will be with your camera. This assumes a good quality exposure and a steady hand when shooting and on the quality of the lens used to make the image.

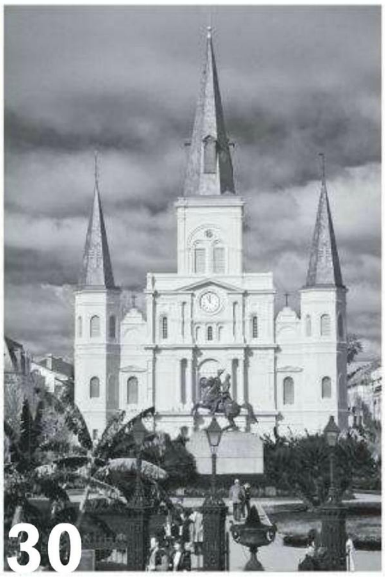
First, multiply the megapixel count of your camera by 3 to get the MB (megabyte) file size of the resultant image (assuming you shoot with the lowest compression, highest quality large JPEG or Raw file). If you have an 8MP camera that's a 24MB file; a 10MP camera equals a 30MB file; a 14MP camera 42MB, and so forth. Then use these rough guides to the largest size print that delivers a good quality image.

Image file size and print size:

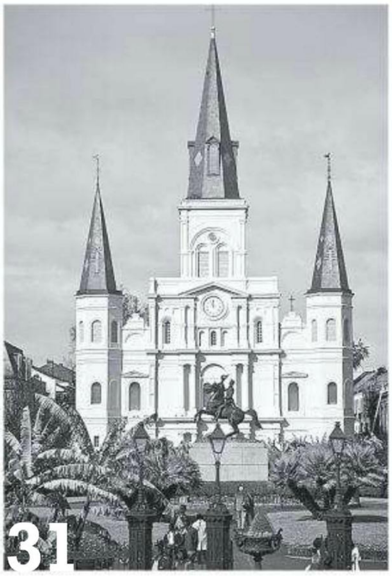
24MB file: 8x10-11x14"
30MB file: 11x14-13x19"
42MB file: 13x19-16x20"



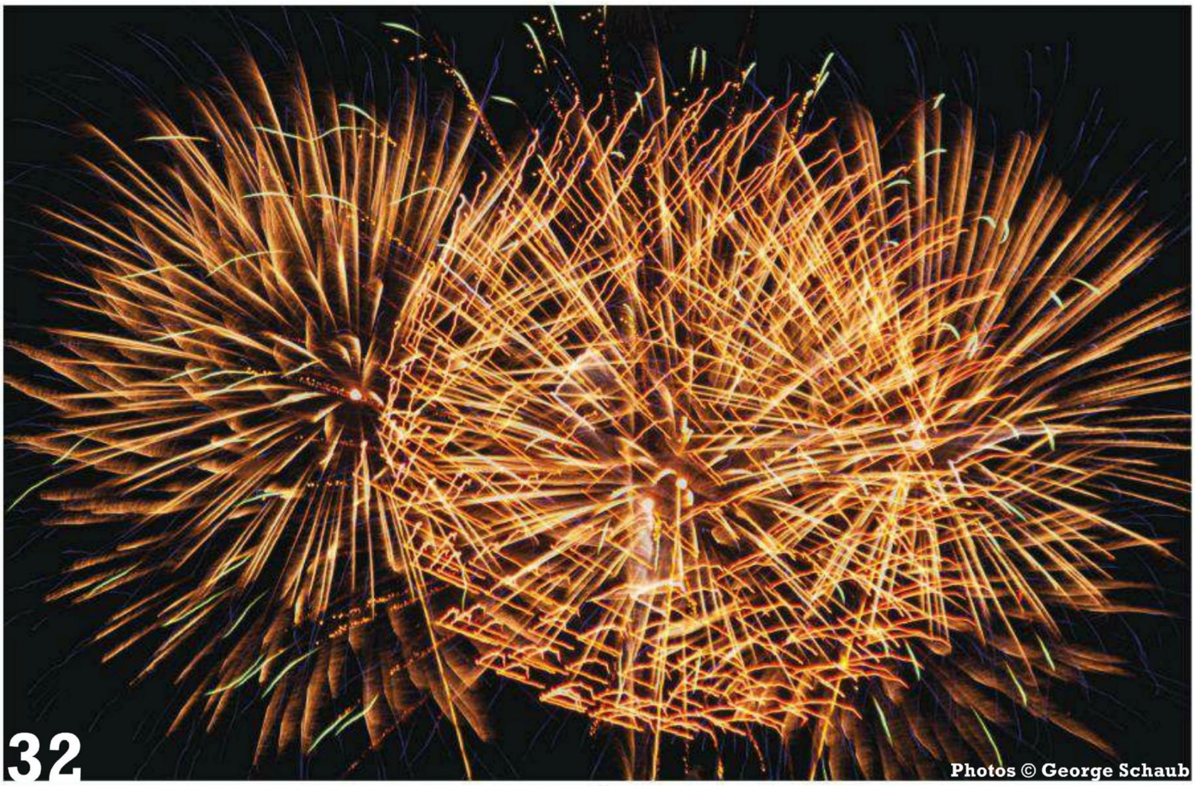
29



30



31



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Photos © George Schaub

This waterfall was photographed using the Monochrome option in the camera and you could say that it is just as if not more effective than a color rendition (#29).

Use the Black and White "Enhancement" filters. When you choose Monochrome you can also work with "filters" or effects that change the way certain colors record in black and white. This processes the image in-camera and allows you to, for example, deepen the tone of blue sky by using a red "filter" or brighten foliage with a yellow or green "filter." If you find it difficult to visualize what this will look like use Live View or Image Review and you'll quickly get a feel for how it can enhance your black and white images.

In this set of photos of New Orleans' Jackson Square the sky is deepened through use of a red filter effect (#30) and made pale by the use of a blue filter effect (#31).

Shoot multiple exposures on a frame. Some cameras offer in-camera multiple exposure. This allows you to shoot numerous images and the processor will put one over the other in the same frame. Some cameras allow you to review the first image from the multiple set and compose over it.

One of the main options to choose is Auto Gain. This automatically adjusts the exposure on each shot in the set to avoid overexposure, something that would happen if no exposure controls were applied. In some cameras you can even apply more exposure to an image in the set, which allows that shot to "come forward" (via exposure) to the front, making the others a kind of backdrop. This multiple exposure of fireworks (#32) was made with 3 exposures of 1/2 sec each and an exposure time that showed the trails of the fireworks to good effect. ■

CAMERA : SIGMA SD14 : ISO50, F4.0, 1/60sec | LENS: SIGMA 17-50mm F2.8 EX DC OS HSM :50mm(17-50)

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Kaitlin Van Rossmann | CAMERA : SIGMA SD14 : ISO50, F2.8, 1/60sec | LENS: SIGMA 85mm F1.4 EX DG HSM : 85mm | Copyright© 2010 Paul Thacker

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